

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

## SEQUENCE LISTING

<110> Arnaout, M. Armin

<120> METHODS FOR IDENTIFYING INTEGRIN ANTAGONISTS

<130> 00786-267002

<140> US 09/592,617

<141> 2000-06-13

<150> US 08/380,167

<151> 1999-01-30

<150> US 08/216,081

<151> 1994-03-21

<150> US 07/637,830

<151> 1991-01-04

<150> US 07/539,842

<151> 1990-06-18

<150> US 07/212,573

<151> 1988-06-28

<160> 72

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 26

<212> PRT

<213> Homo sapiens

<400> 1

Ala	Tyr	Phe	Gly	Ala	Ser	Leu	Cys	Ser	Val	Asp	Val	Asp	Ser	Asn	Gly
1				5					10					15	
Ser	Thr	Asp	Leu	Val	Leu	Ile	Gly	Ala	Pro						
			20				25								

<210> 2

<211> 26

<212> PRT

<213> Homo sapiens

<400> 2

Gly	Arg	Phe	Gly	Ala	Ala	Leu	Thr	Val	Leu	Gly	Asp	Val	Asn	Gly	Asp
1				5					10					15	
Lys	Leu	Thr	Asp	Val	Ala	Ile	Gly	Ala	Pro						
			20				25								

<210> 3

<211> 26

<212> PRT

<213> Homo sapiens

&lt;400&gt; 3

Gln Tyr Phe Gly Gln Ser Leu Ser Gly Gly Gln Asp Leu Thr Met Asp  
 1 5 10 15  
 Gly Leu Val Asp Leu Thr Val Gly Ala Gln  
 20 25

&lt;210&gt; 4

&lt;211&gt; 26

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4

Tyr Glu Gln Thr Arg Gly Gly Gln Val Ser Val Cys Pro Leu Pro Arg  
 1 5 10 15  
 Gly Arg Ala Arg Trp Gln Cys Asp Ala Val  
 20 25

&lt;210&gt; 5

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5

Asp Ile Ala Phe Leu Ile Asp Gly Ser Gly Ser Ile Ile Pro His Asp  
 1 5 10 15  
 Phe Arg Arg Met Lys  
 20

&lt;210&gt; 6

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 6

Arg Arg Met Lys Glu Phe Val Ser Thr Val Met Glu Gln Leu Lys Lys  
 1 5 10 15  
 Ser Lys Thr Leu Phe  
 20

&lt;210&gt; 7

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 7

Ser Leu Met Gln Tyr Ser Glu Glu Phe Arg Ile His Phe Thr Phe Lys  
 1 5 10 15  
 Glu Phe Gln Asn Asn  
 20

&lt;210&gt; 8

&lt;211&gt; 25

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 8

Pro Asn Pro Arg Ser Leu Val Lys Pro Ile Thr Gln Leu Leu Gly Arg  
 1 5 10 15  
 Thr His Thr Ala Thr Gly Ile Arg Lys  
 20 25

<210> 9  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

<400> 9  
 Arg Lys Val Val Arg Glu Leu Phe Asn Ile Thr Asn Gly Ala Arg Lys  
 1 5 10 15  
 Asn Ala Phe Lys  
 20

<210> 10  
 <211> 28  
 <212> PRT  
 <213> Homo sapiens

<400> 10  
 Phe Lys Ile Leu Val Val Ile Thr Asp Gly Glu Lys Phe Gly Asp Pro  
 1 5 10 15  
 Leu Gly Tyr Glu Asp Val Ile Pro Glu Ala Asp Arg  
 20 25

<210> 11  
 <211> 21  
 <212> PRT  
 <213> Homo sapiens

<400> 11  
 Arg Glu Gly Val Ile Arg Tyr Val Ile Gly Val Gly Asp Ala Phe Arg  
 1 5 10 15  
 Ser Glu Lys Ser Arg  
 20

<210> 12  
 <211> 22  
 <212> PRT  
 <213> Homo sapiens

<400> 12  
 Gln Glu Leu Asn Thr Ile Ala Ser Lys Pro Pro Arg Asp His Val Phe  
 1 5 10 15  
 Gln Val Asn Asn Phe Glu  
 20

<210> 13  
 <211> 19  
 <212> PRT  
 <213> Homo sapiens

<400> 13  
 Ala Leu Lys Thr Ile Gln Asn Gln Leu Arg Glu Lys Ile Phe Ala Ile  
 1 5 10 15

Glu Gly Thr

<210> 14  
 <211> 15  
 <212> PRT  
 <213> Homo sapiens

<400> 14  
 Gln Thr Gly Ser Ser Ser Ser Phe Glu His Glu Met Ser Gln Glu  
           1                          5                          10                          15

<210> 15  
 <211> 8  
 <212> PRT  
 <213> Homo sapiens

<400> 15  
 Lys Ser Thr Arg Asp Arg Leu Arg  
           1                          5

<210> 16  
 <211> 22  
 <212> PRT  
 <213> Homo sapiens

<400> 16  
 Phe Arg Ser Glu Lys Ser Arg Gln Glu Leu Asn Thr Ile Ala Ser Lys  
           1                          5                          10                          15  
 Pro Pro Arg Asp His Val  
                           20

<210> 17  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

<400> 17  
 Asp Gly Glu Lys Phe Gly Asp Pro Leu Gly Tyr Glu Asp Val Ile Pro  
           1                          5                          10                          15  
 Glu Ala Asp Arg  
                           20

<210> 18  
 <211> 12  
 <212> PRT  
 <213> Homo sapiens

<400> 18  
 Lys Glu Phe Gln Asn Asn Pro Asn Pro Arg Ser Leu  
           1                          5                          10

<210> 19  
 <211> 18  
 <212> PRT  
 <213> Homo sapiens

<400> 19

Gly Thr Gln Thr Gly Ser Ser Ser Ser Phe Glu His Glu Met Ser Gln  
 1 5 10 15  
 Glu Gly

<210> 20  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 20  
 Ser Asn Leu Arg Gln Gln Pro Gln Lys Phe Pro Glu Ala Leu Arg Gly  
 1 5 10 15  
 Cys Pro Gln Glu Asp Ser Asp  
 20

<210> 21  
 <211> 16  
 <212> PRT  
 <213> Homo sapiens

<400> 21  
 Arg Gln Asn Thr Gly Met Trp Glu Ser Asn Ala Asn Val Lys Gly Thr  
 1 5 10 15

<210> 22  
 <211> 15  
 <212> PRT  
 <213> Homo sapiens

<400> 22  
 Thr Ser Gly Ser Gly Ile Ser Pro Ser His Ser Gln Arg Ile Ala  
 1 5 10 15

<210> 23  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

<400> 23  
 Asn Gln Arg Gly Ser Leu Tyr Gln Cys Asp Tyr Ser Thr Gly Ser Cys  
 1 5 10 15  
 Glu Pro Ile Arg  
 20

<210> 24  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 24  
 Pro Arg Gly Arg Ala Arg Trp Gln Cys  
 1 5

<210> 25  
 <211> 20  
 <212> PRT

<213> Homo sapiens

<400> 25

Lys Leu Ser Pro Arg Leu Gln Tyr Phe Gly Gln Ser Leu Ser Gly Gly  
 1 5 10 15  
 Gln Asp Leu Thr  
 20

<210> 26

<211> 12

<212> PRT

<213> Homo sapiens

<400> 26

Gln Lys Ser Thr Arg Asp Arg Leu Arg Glu Gly Gln  
 1 5 10

<210> 27

<211> 22

<212> PRT

<213> Homo sapiens

<400> 27

Ser Gly Arg Pro His Ser Arg Ala Val Phe Asn Glu Thr Lys Asn Ser  
 1 5 10 15  
 Thr Arg Arg Gln Thr Gln  
 20

<210> 28

<211> 16

<212> PRT

<213> Homo sapiens

<400> 28

Cys Glu Thr Leu Lys Leu Gln Leu Pro Asn Cys Ile Glu Asp Pro Val  
 1 5 10 15

<210> 29

<211> 15

<212> PRT

<213> Homo sapiens

<400> 29

Phe Glu Lys Asn Cys Gly Asn Asp Asn Ile Cys Gln Asp Asp Leu  
 1 5 10 15

<210> 30

<211> 12

<212> PRT

<213> Homo sapiens

<400> 30

Val Arg Asn Asp Gly Glu Asp Ser Tyr Arg Thr Gln  
 1 5 10

<210> 31

<211> 16

<212> PRT

<213> Homo sapiens

<400> 31

Ser Tyr Arg Lys Val Ser Thr Leu Gln Asn Gln Arg Ser Gln Arg Ser  
1 5 10 15

<210> 32

<211> 9

<212> PRT

<213> Homo sapiens

<400> 32

Asp Ile Ala Phe Leu Ile Asp Gly Ser  
1 5

<210> 33

<211> 9

<212> PRT

<213> Homo sapiens

<400> 33

Phe Arg Arg Met Lys Glu Phe Val Ser  
1 5

<210> 34

<211> 11

<212> PRT

<213> Homo sapiens

<400> 34

Phe Lys Ile Leu Val Val Ile Thr Asp Gly Glu  
1 5 10

<210> 35

<211> 11

<212> PRT

<213> Homo sapiens

<400> 35

Val Ile Arg Tyr Val Ile Gly Val Gly Asp Ala  
1 5 10

<210> 36

<211> 10

<212> PRT

<213> Homo sapiens

<400> 36

Asp Gly Glu Lys Phe Gly Asp Pro Leu Gly  
1 5 10

<210> 37

<211> 10

<212> PRT

<213> Homo sapiens



<400> 37

Tyr Glu Asp Val Ile Pro Glu Ala Asp Arg  
1 5 10

<210> 38

<211> 27

<212> PRT

<213> Homo sapiens

<400> 38

Tyr Tyr Glu Gln Thr Arg Gly Gly Gln Val Ser Val Cys Pro Leu Pro  
1 5 10 15  
Arg Gly Arg Ala Arg Trp Gln Cys Asp Ala Val  
20 25

<210> 39

<211> 5138

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (95)...(3604)

<400> 39

gaattccctc tttcaccctg tctaggttgc cagcaaattcc cacgggcctc ctgacgctgc  
60  
ccctggggcc acaggtccct cgagtgcctg aagg atg aag gat tcc tgc atc act  
115

Met Lys Asp Ser Cys Ile Thr  
1 5

gtg atg gcc atg gcg ctg ctg tct ggg ttc ttt ttc ttc gcg ccg gcc  
163

Val Met Ala Met Ala Leu Leu Ser Gly Phe Phe Phe Phe Ala Pro Ala  
10 15 20

tcg agc tac aac ctg gac gtg cgg ggc gcg cgg agc ttc tcc cca ccg  
211

Ser Ser Tyr Asn Leu Asp Val Arg Gly Ala Arg Ser Phe Ser Pro Pro  
25 30 35

cgc gcc ggg agg cac ttt gga tac cgc gtc ctg cag gtc gga aac ggg  
259

Arg Ala Gly Arg His Phe Gly Tyr Arg Val Leu Gln Val Gly Asn Gly  
40 45 50 55

gtc atc gtg gga gct cca ggg gag ggg aac agc aca gga agc ctc tat  
307

Val Ile Val Gly Ala Pro Gly Glu Gly Asn Ser Thr Gly Ser Leu Tyr  
60 65 70

cag tgc cag tcg ggc aca gga cac tgc ctg cca gtc acc ctg aga ggt  
355

Gln Cys Gln Ser Gly Thr Gly His Cys Leu Pro Val Thr Leu Arg Gly  
75 80 85

tcc aac tat acc tcc aag tac ttg ggc atg acc ttg gca aca gac ccc  
403

Ser Asn Tyr Thr Ser Lys Tyr Leu Gly Met Thr Leu Ala Thr Asp Pro  
90 95 100

aca gat gga agc att ttg gcc tgt gac cct ggg ctg tct cga acg tgt  
451

Thr Asp Gly Ser Ile Leu Ala Cys Asp Pro Gly Leu Ser Arg Thr Cys  
105 110 115

gac cag aac acc tat ctg agt ggc ctg tgt tac ctc ttc cgc cag aat  
499

Asp Gln Asn Thr Tyr Leu Ser Gly Leu Cys Tyr Leu Phe Arg Gln Asn  
120 125 130 135

ctg cag ggt ccc atg ctg cag ggg cgc cct ggt ttt cag gaa tgt atc  
547

Leu Gln Gly Pro Met Leu Gln Gly Arg Pro Gly Phe Gln Glu Cys Ile  
140 145 150

aag ggc aac gta gac ctg gta ttt ctg ttt gat ggt tcg atg agc ttg  
595

Lys Gly Asn Val Asp Leu Val Phe Leu Phe Asp Gly Ser Met Ser Leu  
155 160 165

cag cca gat gaa ttt cag aaa att ctg gac ttc atg aag gat gtg atg  
643

Gln Pro Asp Glu Phe Gln Lys Ile Leu Asp Phe Met Lys Asp Val Met  
170 175 180

aag aaa ctc agc aac act tcg tac cag ttt gct gct gtt cag ttt tcc  
691

Lys Lys Leu Ser Asn Thr Ser Tyr Gln Phe Ala Ala Val Gln Phe Ser  
185 190 195

aca agc tac aaa aca gaa ttt gat ttc tca gat tat gtt aaa tgg aag  
739

Thr Ser Tyr Lys Thr Glu Phe Asp Phe Ser Asp Tyr Val Lys Trp Lys  
200 205 210 215

gac cct gat gct ctg ctg aag cat gta aag cac atg ttg ctg ttg aca  
787

Asp Pro Asp Ala Leu Leu Lys His Val Lys His Met Leu Leu Leu Thr  
220 225 230

aat acc ttt ggt gcc atc aat tat gtc gcg aca gag gtg ttc cgg gag  
835

Asn Thr Phe Gly Ala Ile Asn Tyr Val Ala Thr Glu Val Phe Arg Glu  
235 240 245

gag ctg ggg gcc cgg cca gat gcc acc aaa gtg ctt atc atc atc acg  
883

Glu Leu Gly Ala Arg Pro Asp Ala Thr Lys Val Leu Ile Ile Ile Thr  
250 255 260

gat ggg gag gcc act gac agt ggc aac atc gat gcg gcc aaa gac atc  
931

Asp Gly Glu Ala Thr Asp Ser Gly Asn Ile Asp Ala Ala Lys Asp Ile  
265 270 275

atc cgc tac atc atc ggg att gga aag cat ttt cag acc aag gag agt  
979

Ile Arg Tyr Ile Ile Gly Ile Gly Lys His Phe Gln Thr Lys Glu Ser  
280 285 290 295

cag gag acc ctc cac aaa ttt gca tca aaa ccc gcg agc gag ttt gtg  
1027

Gln Glu Thr Leu His Lys Phe Ala Ser Lys Pro Ala Ser Glu Phe Val  
300 305 310

aaa att ctg gac aca ttt gag aag ctg aaa gat cta ttc act gag ctg  
1075

Lys Ile Leu Asp Thr Phe Glu Lys Leu Lys Asp Leu Phe Thr Glu Leu  
315 320 325

cag aag aag atc tat gtc att gag ggc aca agc aaa cag gac ctg act  
1123

Gln Lys Lys Ile Tyr Val Ile Glu Gly Thr Ser Lys Gln Asp Leu Thr  
330 335 340

tcc ttc aac atg gag ctg tcc tcc agc ggc atc agt gct gac ctc agc  
1171

Ser Phe Asn Met Glu Leu Ser Ser Ser Gly Ile Ser Ala Asp Leu Ser  
345 350 355

agg ggc cat gca gtc gtg ggg gca gta gga gcc aag gac tgg gct ggg  
1219

Arg Gly His Ala Val Val Gly Ala Val Gly Ala Lys Asp Trp Ala Gly  
360 365 370 375

ggc ttt ctt gac ctg aag gca gac ctg cag gat gac aca ttt att ggg  
1267

Gly Phe Leu Asp Leu Lys Ala Asp Leu Gln Asp Asp Thr Phe Ile Gly  
380 385 390

aat gaa cca ttg aca cca gaa gtg aga gca ggc tat ttg ggt tac acc  
1315

Asn Glu Pro Leu Thr Pro Glu Val Arg Ala Gly Tyr Leu Gly Tyr Thr  
395 400 405

gtg acc tgg ctg ccc tcc cgg caa aag act tcg ttg ctg gcc tcg gga  
1363

Val Thr Trp Leu Pro Ser Arg Gln Lys Thr Ser Leu Leu Ala Ser Gly  
410 415 420

gcc cct cga tac cag cac atg ggc cga gtg ctg ctg ttc caa gag cca  
1411

Ala Pro Arg Tyr Gln His Met Gly Arg Val Leu Leu Phe Gln Glu Pro  
425 430 435

cag ggc gga gga cac tgg agc cag gtc cag aca atc cat ggg acc cag  
1459

Gln Gly Gly Gly His Trp Ser Gln Val Gln Thr Ile His Gly Thr Gln  
 440 445 450 455

att ggc tct tat ttc ggt ggg gag ctg tgt ggc gtc gac gtg gac caa  
 1507

Ile Gly Ser Tyr Phe Gly Gly Glu Leu Cys Gly Val Asp Val Asp Gln  
 460 465 470

gat ggg gag aca gag ctg ctg ctg att ggt gcc cca ctg ttc tat ggg  
 1555

Asp Gly Glu Thr Glu Leu Leu Leu Ile Gly Ala Pro Leu Phe Tyr Gly  
 475 480 485

gag cag aga gga ggc cgg gtg ttt atc tac cag aga aga cag ttg ggg  
 1603

Glu Gln Arg Gly Gly Arg Val Phe Ile Tyr Gln Arg Arg Gln Leu Gly  
 490 495 500

ttt gaa gaa gtc tca gag ctg cag ggg gac ccc ggc tac cca ctc ggg  
 1651

Phe Glu Glu Val Ser Glu Leu Gln Gly Asp Pro Gly Tyr Pro Leu Gly  
 505 510 515

cgg ttt gga gaa gcc atc act gct ctg aca gac atc aac ggc gat ggg  
 1699

Arg Phe Gly Glu Ala Ile Thr Ala Leu Thr Asp Ile Asn Gly Asp Gly  
 520 525 530 535

ctg gta gac gtg gct gtg ggg gcc cct ctg gag gag cag ggg gct gtg  
 1747

Leu Val Asp Val Ala Val Gly Ala Pro Leu Glu Glu Gln Gly Ala Val  
 540 545 550

tac atc ttc aat ggg agg cac ggg ggg ctt agt ccc cag cca agt cag  
 1795

Tyr Ile Phe Asn Gly Arg His Gly Gly Leu Ser Pro Gln Pro Ser Gln  
 555 560 565

cgg ata gaa ggg acc caa gtg ctc tca gga att cag tgg ttt gga cgc  
 1843

Arg Ile Glu Gly Thr Gln Val Leu Ser Gly Ile Gln Trp Phe Gly Arg  
 570 575 580

tcc atc cat ggg gtg aag gac ctt gaa ggg gat ggc ctg gca gat gtg  
 1891

Ser Ile His Gly Val Lys Asp Leu Glu Gly Asp Gly Leu Ala Asp Val  
 585 590 595

gct gtg ggg gct gag agc cag atg atc gtg ctg agc tcc cgg ccc gtg  
 1939

Ala Val Gly Ala Glu Ser Gln Met Ile Val Leu Ser Ser Arg Pro Val  
 600 605 610 615

gtg gat atg gtc acc ctg atg tcc ttc tct cca gct gag atc cca gtg  
 1987

Val Asp Met Val Thr Leu Met Ser Phe Ser Pro Ala Glu Ile Pro Val

620	625	630
cat gaa gtg gag tgc tcc tat tca acc agt aac aag atg aaa gaa gga 2035		
His Glu Val Glu Cys Ser Tyr Ser Thr Ser Asn Lys Met Lys Glu Gly 635 640 645		
gtt aat atc aca atc tgt ttc cag atc aag tct ctc tac ccc cag ttc 2083		
Val Asn Ile Thr Ile Cys Phe Gln Ile Lys Ser Leu Tyr Pro Gln Phe 650 655 660		
caa ggc cgc ctg gtt gcc aat ctc act tac act ctg cag ctg gat ggc 2131		
Gln Gly Arg Leu Val Ala Asn Leu Thr Tyr Thr Leu Gln Leu Asp Gly 665 670 675		
cac cgg acc aga aga cgg ggg ttg ttc cca gga ggg aga cat gaa ctc 2179		
His Arg Thr Arg Arg Arg Gly Leu Phe Pro Gly Gly Arg His Glu Leu 680 685 690 695		
aga agg aat ata gct gtc acc acc agc atg tca tgc act gac ttc tca 2227		
Arg Arg Asn Ile Ala Val Thr Thr Ser Met Ser Cys Thr Asp Phe Ser 700 705 710		
ttt cat ttc ccg gta tgt gtt caa gac ctc atc tcc ccc atc aat gtt 2275		
Phe His Phe Pro Val Cys Val Gln Asp Leu Ile Ser Pro Ile Asn Val 715 720 725		
tcc ctg aat ttc tct ctt tgg gag gag gaa ggg aca ccg agg gac caa 2323		
Ser Leu Asn Phe Ser Leu Trp Glu Glu Glu Gly Thr Pro Arg Asp Gln 730 735 740		
agg gcg cag ggc aag gac ata ccg ccc atc ctg aga ccc tcc ctg cac 2371		
Arg Ala Gln Gly Lys Asp Ile Pro Pro Ile Leu Arg Pro Ser Leu His 745 750 755		
tcg gaa acc tgg gag atc cct ttt gag aag aac tgt ggg gag gac aag 2419		
Ser Glu Thr Trp Glu Ile Pro Phe Glu Lys Asn Cys Gly Glu Asp Lys 760 765 770 775		
aag tgt gag gca aac ttg aga gtg tcc ttc tct cct gca aga tcc aga 2467		
Lys Cys Glu Ala Asn Leu Arg Val Ser Phe Ser Pro Ala Arg Ser Arg 780 785 790		
gcc ctg cgt cta act gct ttt gcc agc ctc tct gtg gag ctg agc ctg 2515		
Ala Leu Arg Leu Thr Ala Phe Ala Ser Leu Ser Val Glu Leu Ser Leu 795 800 805		

agt aac ttg gaa gaa gat gct tac tgg gtc cag ctg gac ctg cac ttc  
2563

Ser Asn Leu Glu Glu Asp Ala Tyr Trp Val Gln Leu Asp Leu His Phe  
810 815 820

ccc ccg gga ctc tcc ttc cgc aag gtg gag atg ctg aag ccc cat agc  
2611

Pro Pro Gly Leu Ser Phe Arg Lys Val Glu Met Leu Lys Pro His Ser  
825 830 835

cag ata cct gtg agc tgc gag gag ctt cct gaa gag tcc agg ctt ctg  
2659

Gln Ile Pro Val Ser Cys Glu Glu Leu Pro Glu Glu Ser Arg Leu Leu  
840 845 850 855

tcc agg gca tta tct tgc aat gtg agc tct ccc atc ttc aaa gca ggc  
2707

Ser Arg Ala Leu Ser Cys Asn Val Ser Ser Pro Ile Phe Lys Ala Gly  
860 865 870

cac tcg gtt gct ctg cag atg atg ttt aat aca ctg gta aac agc tcc  
2755

His Ser Val Ala Leu Gln Met Met Phe Asn Thr Leu Val Asn Ser Ser  
875 880 885

tgg ggg gac tcg gtt gaa ttg cac gcc aat gtg acc tgt aac aat gag  
2803

Trp Gly Asp Ser Val Glu Leu His Ala Asn Val Thr Cys Asn Asn Glu  
890 895 900

gac tca gac ctc ctg gag gac aac tca gcc act acc atc atc ccc atc  
2851

Asp Ser Asp Leu Leu Glu Asp Asn Ser Ala Thr Thr Ile Ile Pro Ile  
905 910 915

ctg tac ccc atc aac atc ctc atc cag gac caa gaa gac tcc aca ctc  
2899

Leu Tyr Pro Ile Asn Ile Leu Ile Gln Asp Gln Glu Asp Ser Thr Leu  
920 925 930 935

tat gtc agt ttc acc ccc aaa ggc ccc aag atc cac caa gtc aag cac  
2947

Tyr Val Ser Phe Thr Pro Lys Gly Pro Lys Ile His Gln Val Lys His  
940 945 950

atg tac cag gtg agg atc cag cct tcc atc cac gac cac aac ata ccc  
2995

Met Tyr Gln Val Arg Ile Gln Pro Ser Ile His Asp His Asn Ile Pro  
955 960 965

acc ctg gag gct gtg gtt ggg gtg cca cag cct ccc agc gag ggg ccc  
3043

Thr Leu Glu Ala Val Val Gly Val Pro Gln Pro Pro Ser Glu Gly Pro  
970 975 980

atc aca cac cag tgg agc gtg cag atg gag cct ccc gtg ccc tgc cac  
3091

Ile Thr His Gln Trp Ser Val Gln Met Glu Pro Pro Val Pro Cys His  
 985 990 995

tat gag gat ctg gag agg ctc ccg gat gca gct gag cct tgt ctc ccc  
 3139

Tyr Glu Asp Leu Glu Arg Leu Pro Asp Ala Ala Glu Pro Cys Leu Pro  
 1000 1005 1010 1015

gga gcc ctg ttc cgc tgc cct gtt gtc ttc agg cag gag atc ctc gtc  
 3187

Gly Ala Leu Phe Arg Cys Pro Val Val Phe Arg Gln Glu Ile Leu Val  
 1020 1025 1030

caa gtg atc ggg act ctg gag ctg gtg gga gag atc gag gcc tct tcc  
 3235

Gln Val Ile Gly Thr Leu Glu Leu Val Gly Glu Ile Glu Ala Ser Ser  
 1035 1040 1045

atg ttc agc ctc tgc agc tcc ctc tcc atc tcc ttc aac agc agc aag  
 3283

Met Phe Ser Leu Cys Ser Ser Leu Ser Ile Ser Phe Asn Ser Ser Lys  
 1050 1055 1060

cat ttc cac ctc tat ggc agc aac gcc tcc ctg gcc cag gtt gtc atg  
 3331

His Phe His Leu Tyr Gly Ser Asn Ala Ser Leu Ala Gln Val Val Met  
 1065 1070 1075

aag gtt gac gtg gtg tat gag aag cag atg ctc tac ctc tac gtg ctg  
 3379

Lys Val Asp Val Val Tyr Glu Lys Gln Met Leu Tyr Leu Tyr Val Leu  
 1080 1085 1090 1095

agc ggc atc ggg ggg ctg ctg ctg ctg ctg ctc att ttc ata gtg ctg  
 3427

Ser Gly Ile Gly Gly Leu Leu Leu Leu Leu Leu Ile Phe Ile Val Leu  
 1100 1105 1110

tac aag gtt ggt ttc ttc aaa cgg aac ctg aag gag aag atg gag gct  
 3475

Tyr Lys Val Gly Phe Phe Lys Arg Asn Leu Lys Glu Lys Met Glu Ala  
 1115 1120 1125

ggc aga ggt gtc ccg aat gga atc cct gca gaa gac tct gag cag ctg  
 3523

Gly Arg Gly Val Pro Asn Gly Ile Pro Ala Glu Asp Ser Glu Gln Leu  
 1130 1135 1140

gca tct ggg caa gag gct ggg gat ccc ggc tgc ctg aag ccc ctc cat  
 3571

Ala Ser Gly Gln Glu Ala Gly Asp Pro Gly Cys Leu Lys Pro Leu His  
 1145 1150 1155

gag aag gac tct gag agt ggt ggt ggc aag gac tgagtccagc ctgtgaggtg  
 3624

Glu Lys Asp Ser Glu Ser Gly Gly Gly Lys Asp

1160

1165

1170

cagagtgtccc agaactggac tcaggatgcc cagggccact tcgcctctgc ctgcattctg  
 3684  
 ccgtgtgtccc tcgggagagt cactgcctct ccctggccct cagtttccct atctcgaaca  
 3744  
 tggaactcat tcctgaatgt ctcttttgca ggctcatagg gaagacctgc tgagggacca  
 3804  
 gccaagaggg ctgcaaaagt gagggcttgt cattaccaga cggttcacca gcctctcttg  
 3864  
 gttccttcct tggaagagaa tgtctgatct aaatgtggag aaactgtagt ctcaggacct  
 3924  
 agggatgttc tggccctcac ccctgccctg ggatgtccac agatgcctcc acccccaga  
 3984  
 acctgtcctt gcacactccc ctgcaactgga gtccagtctc ttctgttggc agaaagcaaa  
 4044  
 tgtgacctgt gtcactacgt gactgtggca cacgccttgt tcttggccaa agaccaaatt  
 4104  
 ccttggcatg ccttccagca ccctgcaaaa tgagaccctc gtggccttcc ccagcctctt  
 4164  
 ctagagccgt gatgcctccc tgttgaagct ctggtgacac cagcctttct ccaggccag  
 4224  
 gctccttcct gtcttctctgc attcaccag acagctccct ctgcctgaac cttccatctc  
 4284  
 gccaccctt ccttccttga ccagcagatc ccagctcacg tcacacactt ggttgggtcc  
 4344  
 tcacatcttt cacacttcca ccaccctgca ctactccctc aaagcacacg tcatgtttct  
 4404  
 tcatccggca gcctggatgt ttttccctg tttaatgatt gacgtactta gcagctatct  
 4464  
 ctcaagtgaac tgtgagggtg aaggctatac ttgtcttgtt caccttggga tgacgccgca  
 4524  
 tgatatgtca gggcgtggga catctagtag gtgcttgaca taatttctact gaattaatga  
 4584  
 cagagccagt gggaagatac agaaaaagag ggccggggct gggcgcggtg gttcacgcct  
 4644  
 gtaatcccag cactttggga ggccaaggag ggtggatcac ctgaggtcag gagttagagg  
 4704  
 ccagcctggc gaaaccccat ctctactaaa aatacaaaat ccaggcgtgg tggcacacac  
 4764  
 ctgtagtccc agctactcag gaggttgagg taggagaatt gcttgaacct gggagggtga  
 4824  
 ggttgcagt agccaagatt gcgccattgc actccagcct gggcaacaca gcgagactcc  
 4884  
 gtctcaagga aaaaataaaa ataaaaagcg ggcacgggccc cggacatccc cacccttgga  
 4944  
 ggctgtcttc tcaggctctg ccctgcccta gctccacacc ctctcccagg acccatcacg  
 5004  
 cctgtgcagt gggccccaca gaaagactga gctcaagggtg ggaaccacgt ctgctaactt  
 5064  
 ggagccccag tgccaagcac agtgccctgca tgtatttata caataaatgt gaaattctgt  
 5124  
 ccaaaaaaaaa aaaa  
 5138

&lt;210&gt; 40

&lt;211&gt; 3533



&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (75)...(3530)

&lt;400&gt; 40

tggcttcctt gtggttcctc agtgggtgcct gcaacccctg gttcacctcc ttccagggttc  
60

tggcccttcc agcc atg gct ctc aga gtc ctt ctg tta aca gcc ttg acc  
110

Met Ala Leu Arg Val Leu Leu Leu Thr Ala Leu Thr  
1 5 10

tta tgt cat ggg ttc aac ttg gac act gaa aac gca atg acc ttc caa  
158

Leu Cys His Gly Phe Asn Leu Asp Thr Glu Asn Ala Met Thr Phe Gln  
15 20 25

gag aac gca agg ggc ttc ggg cag agc gtg gtc cag ctt cag gga tcc  
206

Glu Asn Ala Arg Gly Phe Gly Gln Ser Val Val Gln Leu Gln Gly Ser  
30 35 40

agg gtg gtg gtt gga gcc ccc cag gag ata gtg gct gcc aac caa agg  
254

Arg Val Val Val Gly Ala Pro Gln Glu Ile Val Ala Ala Asn Gln Arg  
45 50 55 60

ggc agc ctc tac cag tgc gac tac agc aca ggc tca tgc gag ccc atc  
302

Gly Ser Leu Tyr Gln Cys Asp Tyr Ser Thr Gly Ser Cys Glu Pro Ile  
65 70 75

cgc ctg cag gtc ccc gtg gag gcc gtg aac atg tcc ctg ggc ctg tcc  
350

Arg Leu Gln Val Pro Val Glu Ala Val Asn Met Ser Leu Gly Leu Ser  
80 85 90

ctg gca gcc acc acc agc ccc cct cag ctg ctg gcc tgt ggt ccc acc  
398

Leu Ala Ala Thr Thr Ser Pro Pro Gln Leu Leu Ala Cys Gly Pro Thr  
95 100 105

gtg cac cag act tgc agt gag aac acg tat gtg aaa ggg ctc tgc ttc  
446

Val His Gln Thr Cys Ser Glu Asn Thr Tyr Val Lys Gly Leu Cys Phe  
110 115 120

ctg ttt gga tcc aac cta cgg cag cag ccc cag aag ttc cca gag gcc  
494

Leu Phe Gly Ser Asn Leu Arg Gln Gln Pro Gln Lys Phe Pro Glu Ala  
125 130 135 140

ctc cga ggg tgt cct caa gag gat agt gac att gcc ttc ttg att gat  
542

Leu Arg Gly Cys Pro Gln Glu Asp Ser Asp Ile Ala Phe Leu Ile Asp  
 145 150 155  
 ggc tct ggt agc atc atc cca cat gac ttt cgg cgg atg aag gag ttt  
 590  
 Gly Ser Gly Ser Ile Ile Pro His Asp Phe Arg Arg Met Lys Glu Phe  
 160 165 170  
 gtc tca act gtg atg gag caa tta aaa aag tcc aaa acc ttg ttc tct  
 638  
 Val Ser Thr Val Met Glu Gln Leu Lys Lys Ser Lys Thr Leu Phe Ser  
 175 180 185  
 ttg atg cag tac tct gaa gaa ttc cgg att cac ttt acc ttc aaa gag  
 686  
 Leu Met Gln Tyr Ser Glu Glu Phe Arg Ile His Phe Thr Phe Lys Glu  
 190 195 200  
 ttc cag aac aac cct aac cca aga tca ctg gtg aag cca ata acg cag  
 734  
 Phe Gln Asn Asn Pro Asn Pro Arg Ser Leu Val Lys Pro Ile Thr Gln  
 205 210 215 220  
 ctg ctt ggg cgg aca cac acg gcc acg ggc atc cgc aaa gtg gta cga  
 782  
 Leu Leu Gly Arg Thr His Thr Ala Thr Gly Ile Arg Lys Val Val Arg  
 225 230 235  
 gag ctg ttt aac atc acc aac gga gcc cga aag aat gcc ttt aag atc  
 830  
 Glu Leu Phe Asn Ile Thr Asn Gly Ala Arg Lys Asn Ala Phe Lys Ile  
 240 245 250  
 cta gtt gtc atc acg gat gga gaa aag ttt ggc gat ccc ttg gga tat  
 878  
 Leu Val Val Ile Thr Asp Gly Glu Lys Phe Gly Asp Pro Leu Gly Tyr  
 255 260 265  
 gag gat gtc atc cct gag gca gac aga gag gga gtc att cgc tac gtc  
 926  
 Glu Asp Val Ile Pro Glu Ala Asp Arg Glu Gly Val Ile Arg Tyr Val  
 270 275 280  
 att ggg gtg gga gat gcc ttc cgc agt gag aaa tcc cgc caa gag ctt  
 974  
 Ile Gly Val Gly Asp Ala Phe Arg Ser Glu Lys Ser Arg Gln Glu Leu  
 285 290 295 300  
 aat acc atc gca tcc aag ccg cct cgt gat cac gtg ttc cag gtg aat  
 1022  
 Asn Thr Ile Ala Ser Lys Pro Pro Arg Asp His Val Phe Gln Val Asn  
 305 310 315  
 aac ttt gag gct ctg aag acc att cag aac cag ctt cgg gag aag atc  
 1070  
 Asn Phe Glu Ala Leu Lys Thr Ile Gln Asn Gln Leu Arg Glu Lys Ile  
 320 325 330

ttt gcg atc gag ggt act cag aca gga agt agc agc tcc ttt gag cat  
1118

Phe Ala Ile Glu Gly Thr Gln Thr Gly Ser Ser Ser Ser Phe Glu His  
335 340 345

gag atg tct cag gaa ggc ttc agc gct gcc atc acc tct aat ggc ccc  
1166

Glu Met Ser Gln Glu Gly Phe Ser Ala Ala Ile Thr Ser Asn Gly Pro  
350 355 360

ttg ctg agc act gtg ggg agc tat gac tgg gct ggt gga gtc ttt cta  
1214

Leu Leu Ser Thr Val Gly Ser Tyr Asp Trp Ala Gly Gly Val Phe Leu  
365 370 375 380

tat aca tca aag gag aaa agc acc ttc atc aac atg acc aga gtg gat  
1262

Tyr Thr Ser Lys Glu Lys Ser Thr Phe Ile Asn Met Thr Arg Val Asp  
385 390 395

tca gac atg aat gat gct tac ttg ggt tat gct gcc gcc atc atc tta  
1310

Ser Asp Met Asn Asp Ala Tyr Leu Gly Tyr Ala Ala Ala Ile Ile Leu  
400 405 410

cgg aac cgg gtg caa agc ctg gtt ctg ggg gca cct cga tat cag cac  
1358

Arg Asn Arg Val Gln Ser Leu Val Leu Gly Ala Pro Arg Tyr Gln His  
415 420 425

atc ggc ctg gta gcg atg ttc agg cag aac act ggc atg tgg gag tcc  
1406

Ile Gly Leu Val Ala Met Phe Arg Gln Asn Thr Gly Met Trp Glu Ser  
430 435 440

aac gct aat gtc aag ggc acc cag atc ggc gcc tac ttc ggg gcc tcc  
1454

Asn Ala Asn Val Lys Gly Thr Gln Ile Gly Ala Tyr Phe Gly Ala Ser  
445 450 455 460

ctc tgc tcc gtg gac gtg gac agc aac ggc agc acc gac ctg gtc ctc  
1502

Leu Cys Ser Val Asp Val Asp Ser Asn Gly Ser Thr Asp Leu Val Leu  
465 470 475

atc ggg gcc ccc cat tac tac gag cag acc cga ggg ggc cag gtg tcc  
1550

Ile Gly Ala Pro His Tyr Tyr Glu Gln Thr Arg Gly Gly Gln Val Ser  
480 485 490

gtg tgc ccc ttg ccc agg ggg agg gct cgg tgg cag tgt gat gct gtt  
1598

Val Cys Pro Leu Pro Arg Gly Arg Ala Arg Trp Gln Cys Asp Ala Val  
495 500 505

ctc tac ggg gag cag ggc caa ccc tgg ggc cgc ttt ggg gca gcc cta  
1646

Leu Tyr Gly Glu Gln Gly Gln Pro Trp Gly Arg Phe Gly Ala Ala Leu  
510 515 520

aca gtg ctg ggg gac gta aat ggg gac aag ctg acg gac gtg gcc att  
1694

Thr Val Leu Gly Asp Val Asn Gly Asp Lys Leu Thr Asp Val Ala Ile  
525 530 535 540

ggg gcc cca gga gag gag gac aac cgg ggt gct gtt tac ctg ttt cac  
1742

Gly Ala Pro Gly Glu Glu Asp Asn Arg Gly Ala Val Tyr Leu Phe His  
545 550 555

gga acc tca gga tct ggc atc agc ccc tcc cat agc cag cgg ata gca  
1790

Gly Thr Ser Gly Ser Gly Ile Ser Pro Ser His Ser Gln Arg Ile Ala  
560 565 570

ggc tcc aag ctc tct ccc agg ctc cag tat ttt ggt cag tca ctg agt  
1838

Gly Ser Lys Leu Ser Pro Arg Leu Gln Tyr Phe Gly Gln Ser Leu Ser  
575 580 585

ggg ggc cag gac ctc aca atg gat gga ctg gta gac ctg act gta gga  
1886

Gly Gly Gln Asp Leu Thr Met Asp Gly Leu Val Asp Leu Thr Val Gly  
590 595 600

gcc cag ggg cac gtg ctg ctg ctc agg tcc cag cca gta ctg aga gtc  
1934

Ala Gln Gly His Val Leu Leu Leu Arg Ser Gln Pro Val Leu Arg Val  
605 610 615 620

aag gca atc atg gag ttc aat ccc agg gaa gtg gca agg aat gta ttt  
1982

Lys Ala Ile Met Glu Phe Asn Pro Arg Glu Val Ala Arg Asn Val Phe  
625 630 635

gag tgt aat gat caa gtg gtg aaa ggc aag gaa gcc gga gag gtc aga  
2030

Glu Cys Asn Asp Gln Val Val Lys Gly Lys Glu Ala Gly Glu Val Arg  
640 645 650

gtc tgc ctc cat gtc cag aag agc aca cgg gat cgg cta aga gaa gga  
2078

Val Cys Leu His Val Gln Lys Ser Thr Arg Asp Arg Leu Arg Glu Gly  
655 660 665

cag atc cag agt gtt gtg act tat gac ctg gct ctg gac tcc ggc cgc  
2126

Gln Ile Gln Ser Val Val Thr Tyr Asp Leu Ala Leu Asp Ser Gly Arg  
670 675 680

cca cat tcc cgc gcc gtc ttc aat gag aca aag aac agc aca cgc aga  
2174

Pro His Ser Arg Ala Val Phe Asn Glu Thr Lys Asn Ser Thr Arg Arg  
 685 690 695 700  
 cag aca cag gtc ttg ggg ctg acc cag act tgt gag acc ctg aaa cta  
 2222  
 Gln Thr Gln Val Leu Gly Leu Thr Gln Thr Cys Glu Thr Leu Lys Leu  
 705 710 715  
 cag ttg ccg aat tgc atc gag gac cca gtg agc ccc att gtg ctg cgc  
 2270  
 Gln Leu Pro Asn Cys Ile Glu Asp Pro Val Ser Pro Ile Val Leu Arg  
 720 725 730  
 ctg aac ttc tct ctg gtg gga acg cca ttg tct gct ttc ggg aac ctc  
 2318  
 Leu Asn Phe Ser Leu Val Gly Thr Pro Leu Ser Ala Phe Gly Asn Leu  
 735 740 745  
 cgg cca gtg ctg gcg gag gat gct cag aga ctc ttc aca gcc ttg ttt  
 2366  
 Arg Pro Val Leu Ala Glu Asp Ala Gln Arg Leu Phe Thr Ala Leu Phe  
 750 755 760  
 ccc ttt gag aag aat tgt ggc aat gac aac atc tgc cag gat gac ctc  
 2414  
 Pro Phe Glu Lys Asn Cys Gly Asn Asp Asn Ile Cys Gln Asp Asp Leu  
 765 770 775 780  
 agc atc acc ttc agt ttc atg agc ctg gac tgc ctc gtg gtg ggt ggg  
 2462  
 Ser Ile Thr Phe Ser Phe Met Ser Leu Asp Cys Leu Val Val Gly Gly  
 785 790 795  
 ccc cgg gag tct aac gtg aca gtg act gtg aga aat gat ggt gag gac  
 2510  
 Pro Arg Glu Ser Asn Val Thr Val Thr Val Arg Asn Asp Gly Glu Asp  
 800 805 810  
 tcc tac agg aca cag gtc acc ttc ttc ttc ccg ctt gac ctg tcc tac  
 2558  
 Ser Tyr Arg Thr Gln Val Thr Phe Phe Phe Pro Leu Asp Leu Ser Tyr  
 815 820 825  
 cgg aag gtg tcc aca ctc cag aac cag cgc tca cag cga tcc tgg cgc  
 2606  
 Arg Lys Val Ser Thr Leu Gln Asn Gln Arg Ser Gln Arg Ser Trp Arg  
 830 835 840  
 ctg gcc tgt gag tct gcc tcc tcc acc gaa gtg tct ggg gcc ttg aag  
 2654  
 Leu Ala Cys Glu Ser Ala Ser Ser Thr Glu Val Ser Gly Ala Leu Lys  
 845 850 855 860  
 agc acc agc tgc agc ata aac cac ccc atc ttc ccg gaa aac tca gag  
 2702  
 Ser Thr Ser Cys Ser Ile Asn His Pro Ile Phe Pro Glu Asn Ser Glu  
 865 870 875

gtc acc ttt aat atc acg ttt gat gta gac tct aag gct tcc ctt gga  
2750

Val Thr Phe Asn Ile Thr Phe Asp Val Asp Ser Lys Ala Ser Leu Gly  
880 885 890

aac aaa ctg ctc ctc aag gcc aat gtg acc agt gag aac aac atg ccc  
2798

Asn Lys Leu Leu Leu Lys Ala Asn Val Thr Ser Glu Asn Asn Met Pro  
895 900 905

aga acc aac aaa acc gaa ttc caa ctg gag ctg ccg gtg aaa tat gct  
2846

Arg Thr Asn Lys Thr Glu Phe Gln Leu Glu Leu Pro Val Lys Tyr Ala  
910 915 920

gtc tac atg gtg gtc acc agc cat ggg gtc tcc act aaa tat ctc aac  
2894

Val Tyr Met Val Val Thr Ser His Gly Val Ser Thr Lys Tyr Leu Asn  
925 930 935 940

ttc acg gcc tca gag aat acc agt cgg gtc atg cag cat caa tat cag  
2942

Phe Thr Ala Ser Glu Asn Thr Ser Arg Val Met Gln His Gln Tyr Gln  
945 950 955

gtc agc aac ctg ggg cag agg agc ccc ccc atc agc ctg gtg ttc ttg  
2990

Val Ser Asn Leu Gly Gln Arg Ser Pro Pro Ile Ser Leu Val Phe Leu  
960 965 970

gtg ccc gtc cgg ctg aac cag act gtc ata tgg gac cgc ccc cag gtc  
3038

Val Pro Val Arg Leu Asn Gln Thr Val Ile Trp Asp Arg Pro Gln Val  
975 980 985

acc ttc tcc gag aac ctc tcg agt acg tgc cac acc aag gag cgc ttg  
3086

Thr Phe Ser Glu Asn Leu Ser Ser Thr Cys His Thr Lys Glu Arg Leu  
990 995 1000

ccc tct cac tcc gac ttt ctg gct gag ctt cgg aag gcc ccc gtg gtg  
3134

Pro Ser His Ser Asp Phe Leu Ala Glu Leu Arg Lys Ala Pro Val Val  
1005 1010 1015 1020

aac tgc tcc atc gct gtc tgc cag aga atc cag tgt gac atc ccg ttc  
3182

Asn Cys Ser Ile Ala Val Cys Gln Arg Ile Gln Cys Asp Ile Pro Phe  
1025 1030 1035

ttt ggc atc cag gaa gaa ttc aat gct acc ctc aaa ggc aac ctc tcg  
3230

Phe Gly Ile Gln Glu Glu Phe Asn Ala Thr Leu Lys Gly Asn Leu Ser  
1040 1045 1050

ttt gac tgg tac atc aag acc tcg cat aac cac ctc ctg atc gtg agc  
3278

Phe Asp Trp Tyr Ile Lys Thr Ser His Asn His Leu Leu Ile Val Ser  
1055 1060 1065

aca gct gag atc ttg ttt aac gat tcc gtg ttc acc ctg ctg ccg gga  
3326

Thr Ala Glu Ile Leu Phe Asn Asp Ser Val Phe Thr Leu Leu Pro Gly  
1070 1075 1080

cag ggg gcg ttt gtg agg tcc cag acg gag acc aaa gtg gag ccg ttc  
3374

Gln Gly Ala Phe Val Arg Ser Gln Thr Glu Thr Lys Val Glu Pro Phe  
1085 1090 1095 1100

gag gtc ccc aac ccc ctg ccg ctc atc gtg ggc agc tct gtc ggg gga  
3422

Glu Val Pro Asn Pro Leu Pro Leu Ile Val Gly Ser Ser Val Gly Gly  
1105 1110 1115

ctg ctg ctc ctg gcc ctc atc acc gcc gcg ctg tac aag ctc ggc ttc  
3470

Leu Leu Leu Leu Ala Leu Ile Thr Ala Ala Leu Tyr Lys Leu Gly Phe  
1120 1125 1130

ttc aag cgg caa tac aag gac atg atg agt gaa ggg ggt ccc ccg ggg  
3518

Phe Lys Arg Gln Tyr Lys Asp Met Met Ser Glu Gly Gly Pro Pro Gly  
1135 1140 1145

gcc gaa ccc cag tag  
3533

Ala Glu Pro Gln  
1150

<210> 41

<211> 2291

<212> DNA

<213> Homo sapiens

<400> 41

ctcgccctgg tggggctgct ctccctcggg tgcgtcctct ctcaggagtg cacgaagttc  
60

aaggtcagca gctgccggga atgcatcgag tcggggcccg gctgcacctg gtgccagaag  
120

ctgaacttca cagggccggg ggatcctgac tccattcgct gcgacacccg gccacagctg  
180

ctcatgaggg gctgtgcggc tgacgacatc atggacccca caagcctcgc tgaaaccag  
240

gaagaccaca atgggggcca gaagcagctg tccccacaaa aagtgcgct ttacctgcga  
300

ccaggccagg cagcagcggt caacgtgacc ttccggcggg ccaagggcta ccccatcgac  
360

ctgtactatc tgatggacct ctctactcc atgcttgatg acctcaggaa tgtcaagaag  
420

ctaggtggcg acctgctccg ggccctcaac gagatcaccg agtccggccg cattggcttc  
480

gggtccttcg tggacaagac cgtgctgccg ttcgtgaaca cgcaccctga taagctgcga  
 540  
 aacccatgcc ccaacaagga gaaagagtgc cagcccccggt ttgccttcag gcacgtgctg  
 600  
 aagctgacca acaactccaa ccagtttcag accgaggtcg ggaagcagct gatttcggga  
 660  
 aacctggatg cacccgaggg tgggctggac gccatgatgc aggtcgccgc ctgccccgag  
 720  
 gaaatcggtt ggcgcaacgt cacgcggctg ctggtgtttg cactgatga cggcttccat  
 780  
 ttcgcgggag acggaaaagt gggcgccatc ctgacccccca acgacggccg ctgtcacctg  
 840  
 gaggacaact tgtacaagag gagcaacgaa ttcgactacc catcggtggg ccagctggcg  
 900  
 cacaagctgg ctgaaaacaa catccagccc atcttcgcgg tgaccagtag gatggtgaag  
 960  
 acctacgaga aactcaccga gatcatcccc aagtcagccg tgggggagct gtctgaggac  
 1020  
 tccagcaatg tgggccatct cattaagaat gcttacaata aactctctc cagggtcttc  
 1080  
 ctggatcaca acgcccctcc cgacaccctg aaagtcacct acgactcctt ctgcagcaat  
 1140  
 ggagtgcgc acaggaacca gccagaggt gactgtgatg gcgtgcagat caatgtcccc  
 1200  
 atcaccttcc aggtgaaggt cacggccaca gagtgcaccc aggagcagtc gtttgtcacc  
 1260  
 cgggcgctgg gcttcacgga catagtgcac gtgcaggctc tccccagtg tgagtgcggg  
 1320  
 tgccgggacc agagcagaga ccgcagcctc tgccatggca agggcttctt ggagtgcggc  
 1380  
 atctgcaggt gtgacactgg ctacattggg aaaaactgtg agtgccagac acagggccgg  
 1440  
 agcagccagg agctggaagg aagctgccgg aaggacaaca actccatcat ctgctcaggg  
 1500  
 ctgggggact gtgtctgcgg gcagtgcctg tgccacacca gcgacgtccc cggcaagctg  
 1560  
 atatacgggc agtactgcga gtgtgacacc atcaactgtg agcgctacaa cggccaggtc  
 1620  
 tgcggcggcc cggggagggg gctctgcttc tgcgggaagt gccgctgcca cccgggcttt  
 1680  
 gagggtcag cgtgccagtg cgagaggacc actgagggct gcctgaacct gcggcggtt  
 1740  
 gagtgtagt gtcgtggccg gtgccgctgc aacgtatgcg agtgccattc aggctaccg  
 1800  
 ctgcctctgt gccaggagt ccccggtgc cctcaccct gtggcaagta catctcctgc  
 1860  
 gccgagtgc tgaagttcga aaagggcccc tttgggaaga actgcagcgc ggcgtgtccg  
 1920  
 ggctgcagc tgtcgaacaa ccccgtaag ggcaggacct gcaaggagag ggactcagag  
 1980  
 ggctgctggg tggcctacac gctggagcag caggacggga tggaccgcta cctcatctat  
 2040  
 gtggatgaga gccgagagt tgtggcaggc cccaacatcg ccgccatcgt cgggggcacc  
 2100  
 gtggcaggca tcgtgctgat cggcattctc ctgctggtca tctggaaggc tctgatccac  
 2160



ctgagcgacc tccgggagta caggcgcttt gagaaggaga agctcaagtc ccagtggaaac  
 2220  
 aatgataatc cccttttcaa gagcgccacc acgacggtca tgaaccccaa gtttgctgag  
 2280  
 agttaggagc a  
 2291

<210> 42  
 <211> 1170  
 <212> PRT  
 <213> Homo sapiens

<400> 42  
 Met Lys Asp Ser Cys Ile Thr Val Met Ala Met Ala Leu Leu Ser Gly  
 1 5 10 15  
 Phe Phe Phe Phe Ala Pro Ala Ser Ser Tyr Asn Leu Asp Val Arg Gly  
 20 25 30  
 Ala Arg Ser Phe Ser Pro Pro Arg Ala Gly Arg His Phe Gly Tyr Arg  
 35 40 45  
 Val Leu Gln Val Gly Asn Gly Val Ile Val Gly Ala Pro Gly Glu Gly  
 50 55 60  
 Asn Ser Thr Gly Ser Leu Tyr Gln Cys Gln Ser Gly Thr Gly His Cys  
 65 70 75 80  
 Leu Pro Val Thr Leu Arg Gly Ser Asn Tyr Thr Ser Lys Tyr Leu Gly  
 85 90 95  
 Met Thr Leu Ala Thr Asp Pro Thr Asp Gly Ser Ile Leu Ala Cys Asp  
 100 105 110  
 Pro Gly Leu Ser Arg Thr Cys Asp Gln Asn Thr Tyr Leu Ser Gly Leu  
 115 120 125  
 Cys Tyr Leu Phe Arg Gln Asn Leu Gln Gly Pro Met Leu Gln Gly Arg  
 130 135 140  
 Pro Gly Phe Gln Glu Cys Ile Lys Gly Asn Val Asp Leu Val Phe Leu  
 145 150 155 160  
 Phe Asp Gly Ser Met Ser Leu Gln Pro Asp Glu Phe Gln Lys Ile Leu  
 165 170 175  
 Asp Phe Met Lys Asp Val Met Lys Lys Leu Ser Asn Thr Ser Tyr Gln  
 180 185 190  
 Phe Ala Ala Val Gln Phe Ser Thr Ser Tyr Lys Thr Glu Phe Asp Phe  
 195 200 205  
 Ser Asp Tyr Val Lys Trp Lys Asp Pro Asp Ala Leu Leu Lys His Val  
 210 215 220  
 Lys His Met Leu Leu Leu Thr Asn Thr Phe Gly Ala Ile Asn Tyr Val  
 225 230 235 240  
 Ala Thr Glu Val Phe Arg Glu Glu Leu Gly Ala Arg Pro Asp Ala Thr  
 245 250 255  
 Lys Val Leu Ile Ile Ile Thr Asp Gly Glu Ala Thr Asp Ser Gly Asn  
 260 265 270  
 Ile Asp Ala Lys Asp Ile Ile Arg Tyr Ile Ile Gly Ile Gly Lys  
 275 280 285  
 His Phe Gln Thr Lys Glu Ser Gln Glu Thr Leu His Lys Phe Ala Ser  
 290 295 300  
 Lys Pro Ala Ser Glu Phe Val Lys Ile Leu Asp Thr Phe Glu Lys Leu  
 305 310 315 320  
 Lys Asp Leu Phe Thr Glu Leu Gln Lys Lys Ile Tyr Val Ile Glu Gly  
 325 330 335  
 Thr Ser Lys Gln Asp Leu Thr Ser Phe Asn Met Glu Leu Ser Ser Ser  
 340 345 350

Gly Ile Ser Ala Asp Leu Ser Arg Gly His Ala Val Val Gly Ala Val  
 355 360 365  
 Gly Ala Lys Asp Trp Ala Gly Gly Phe Leu Asp Leu Lys Ala Asp Leu  
 370 375 380  
 Gln Asp Asp Thr Phe Ile Gly Asn Glu Pro Leu Thr Pro Glu Val Arg  
 385 390 395 400  
 Ala Gly Tyr Leu Gly Tyr Thr Val Thr Trp Leu Pro Ser Arg Gln Lys  
 405 410 415  
 Thr Ser Leu Leu Ala Ser Gly Ala Pro Arg Tyr Gln His Met Gly Arg  
 420 425 430  
 Val Leu Leu Phe Gln Glu Pro Gln Gly Gly Gly His Trp Ser Gln Val  
 435 440 445  
 Gln Thr Ile His Gly Thr Gln Ile Gly Ser Tyr Phe Gly Gly Glu Leu  
 450 455 460  
 Cys Gly Val Asp Val Asp Gln Asp Gly Glu Thr Glu Leu Leu Leu Ile  
 465 470 475 480  
 Gly Ala Pro Leu Phe Tyr Gly Glu Gln Arg Gly Gly Arg Val Phe Ile  
 485 490 495  
 Tyr Gln Arg Arg Gln Leu Gly Phe Glu Glu Val Ser Glu Leu Gln Gly  
 500 505 510  
 Asp Pro Gly Tyr Pro Leu Gly Arg Phe Gly Glu Ala Ile Thr Ala Leu  
 515 520 525  
 Thr Asp Ile Asn Gly Asp Gly Leu Val Asp Val Ala Val Gly Ala Pro  
 530 535 540  
 Leu Glu Glu Gln Gly Ala Val Tyr Ile Phe Asn Gly Arg His Gly Gly  
 545 550 555 560  
 Leu Ser Pro Gln Pro Ser Gln Arg Ile Glu Gly Thr Gln Val Leu Ser  
 565 570 575  
 Gly Ile Gln Trp Phe Gly Arg Ser Ile His Gly Val Lys Asp Leu Glu  
 580 585 590  
 Gly Asp Gly Leu Ala Asp Val Ala Val Gly Ala Glu Ser Gln Met Ile  
 595 600 605  
 Val Leu Ser Ser Arg Pro Val Val Asp Met Val Thr Leu Met Ser Phe  
 610 615 620  
 Ser Pro Ala Glu Ile Pro Val His Glu Val Glu Cys Ser Tyr Ser Thr  
 625 630 635 640  
 Ser Asn Lys Met Lys Glu Gly Val Asn Ile Thr Ile Cys Phe Gln Ile  
 645 650 655  
 Lys Ser Leu Tyr Pro Gln Phe Gln Gly Arg Leu Val Ala Asn Leu Thr  
 660 665 670  
 Tyr Thr Leu Gln Leu Asp Gly His Arg Thr Arg Arg Arg Gly Leu Phe  
 675 680 685  
 Pro Gly Gly Arg His Glu Leu Arg Arg Asn Ile Ala Val Thr Thr Ser  
 690 695 700  
 Met Ser Cys Thr Asp Phe Ser Phe His Phe Pro Val Cys Val Gln Asp  
 705 710 715 720  
 Leu Ile Ser Pro Ile Asn Val Ser Leu Asn Phe Ser Leu Trp Glu Glu  
 725 730 735  
 Glu Gly Thr Pro Arg Asp Gln Arg Ala Gln Gly Lys Asp Ile Pro Pro  
 740 745 750  
 Ile Leu Arg Pro Ser Leu His Ser Glu Thr Trp Glu Ile Pro Phe Glu  
 755 760 765  
 Lys Asn Cys Gly Glu Asp Lys Lys Cys Glu Ala Asn Leu Arg Val Ser  
 770 775 780  
 Phe Ser Pro Ala Arg Ser Arg Ala Leu Arg Leu Thr Ala Phe Ala Ser  
 785 790 795 800  
 Leu Ser Val Glu Leu Ser Leu Ser Asn Leu Glu Glu Asp Ala Tyr Trp

Val	Gln	Leu	Asp	805	Leu	His	Phe	Pro	Pro	810	Gly	Leu	Ser	Phe	Arg	815	Lys	Val
			820							825						830		
Glu	Met	Leu	Lys	Pro	His	Ser	Gln	Ile	Pro	Val	Ser	Cys	Glu	Glu	Leu			
		835						840						845				
Pro	Glu	Glu	Ser	Arg	Leu	Leu	Ser	Arg	Ala	Leu	Ser	Cys	Asn	Val	Ser			
		850					855					860						
Ser	Pro	Ile	Phe	Lys	Ala	Gly	His	Ser	Val	Ala	Leu	Gln	Met	Met	Phe			
		865				870					875				880			
Asn	Thr	Leu	Val	Asn	Ser	Ser	Trp	Gly	Asp	Ser	Val	Glu	Leu	His	Ala			
				885					890						895			
Asn	Val	Thr	Cys	Asn	Asn	Glu	Asp	Ser	Asp	Leu	Leu	Glu	Asp	Asn	Ser			
			900					905						910				
Ala	Thr	Thr	Ile	Ile	Pro	Ile	Leu	Tyr	Pro	Ile	Asn	Ile	Leu	Ile	Gln			
		915					920							925				
Asp	Gln	Glu	Asp	Ser	Thr	Leu	Tyr	Val	Ser	Phe	Thr	Pro	Lys	Gly	Pro			
		930					935					940						
Lys	Ile	His	Gln	Val	Lys	His	Met	Tyr	Gln	Val	Arg	Ile	Gln	Pro	Ser			
					950					955					960			
Ile	His	Asp	His	Asn	Ile	Pro	Thr	Leu	Glu	Ala	Val	Val	Gly	Val	Pro			
				965					970					975				
Gln	Pro	Pro	Ser	Glu	Gly	Pro	Ile	Thr	His	Gln	Trp	Ser	Val	Gln	Met			
			980					985					990					
Glu	Pro	Pro	Val	Pro	Cys	His	Tyr	Glu	Asp	Leu	Glu	Arg	Leu	Pro	Asp			
		995					1000					1005						
Ala	Ala	Glu	Pro	Cys	Leu	Pro	Gly	Ala	Leu	Phe	Arg	Cys	Pro	Val	Val			
		1010				1015					1020							
Phe	Arg	Gln	Glu	Ile	Leu	Val	Gln	Val	Ile	Gly	Thr	Leu	Glu	Leu	Val			
		1025				1030					1035				1040			
Gly	Glu	Ile	Glu	Ala	Ser	Ser	Met	Phe	Ser	Leu	Cys	Ser	Ser	Leu	Ser			
				1045					1050					1055				
Ile	Ser	Phe	Asn	Ser	Ser	Lys	His	Phe	His	Leu	Tyr	Gly	Ser	Asn	Ala			
			1060					1065					1070					
Ser	Leu	Ala	Gln	Val	Val	Met	Lys	Val	Asp	Val	Val	Tyr	Glu	Lys	Gln			
		1075					1080					1085						
Met	Leu	Tyr	Leu	Tyr	Val	Leu	Ser	Gly	Ile	Gly	Gly	Leu	Leu	Leu	Leu			
		1090				1095					1100							
Leu	Leu	Ile	Phe	Ile	Val	Leu	Tyr	Lys	Val	Gly	Phe	Phe	Lys	Arg	Asn			
		1105				1110				1115					1120			
Leu	Lys	Glu	Lys	Met	Glu	Ala	Gly	Arg	Gly	Val	Pro	Asn	Gly	Ile	Pro			
			1125					1130					1135					
Ala	Glu	Asp	Ser	Glu	Gln	Leu	Ala	Ser	Gly	Gln	Glu	Ala	Gly	Asp	Pro			
			1140					1145				1150						
Gly	Cys	Leu	Lys	Pro	Leu	His	Glu	Lys	Asp	Ser	Glu	Ser	Gly	Gly	Gly			
		1155					1160					1165						
Lys	Asp																	
		1170																

&lt;210&gt; 43

&lt;211&gt; 1152

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SIGNAL

&lt;222&gt; -16 to -1

<400> 43  
 Met Ala Leu Arg Val Leu Leu Leu Thr Ala Leu Thr Leu Cys His Gly  
 -15 -10 -5  
 Phe Asn Leu Asp Thr Glu Asn Ala Met Thr Phe Gln Glu Asn Ala Arg  
 1 5 10 15  
 Gly Phe Gly Gln Ser Val Val Gln Leu Gln Gly Ser Arg Val Val Val  
 20 25 30  
 Gly Ala Pro Gln Glu Ile Val Ala Ala Asn Gln Arg Gly Ser Leu Tyr  
 35 40 45  
 Gln Cys Asp Tyr Ser Thr Gly Ser Cys Glu Pro Ile Arg Leu Gln Val  
 50 55 60  
 Pro Val Glu Ala Val Asn Met Ser Leu Gly Leu Ser Leu Ala Ala Thr  
 65 70 75 80  
 Thr Ser Pro Pro Gln Leu Leu Ala Cys Gly Pro Thr Val His Gln Thr  
 85 90 95  
 Cys Ser Glu Asn Thr Tyr Val Lys Gly Leu Cys Phe Leu Phe Gly Ser  
 100 105 110  
 Asn Leu Arg Gln Gln Pro Gln Lys Phe Pro Glu Ala Leu Arg Gly Cys  
 115 120 125  
 Pro Gln Glu Asp Ser Asp Ile Ala Phe Leu Ile Asp Gly Ser Gly Ser  
 130 135 140  
 Ile Ile Pro His Asp Phe Arg Arg Met Lys Glu Phe Val Ser Thr Val  
 145 150 155 160  
 Met Glu Gln Leu Lys Lys Ser Lys Thr Leu Phe Ser Leu Met Gln Tyr  
 165 170 175  
 Ser Glu Glu Phe Arg Ile His Phe Thr Phe Lys Glu Phe Gln Asn Asn  
 180 185 190  
 Pro Asn Pro Arg Ser Leu Val Lys Pro Ile Thr Gln Leu Leu Gly Arg  
 195 200 205  
 Thr His Thr Ala Thr Gly Ile Arg Lys Val Val Arg Glu Leu Phe Asn  
 210 215 220  
 Ile Thr Asn Gly Ala Arg Lys Asn Ala Phe Lys Ile Leu Val Val Ile  
 225 230 235 240  
 Thr Asp Gly Glu Lys Phe Gly Asp Pro Leu Gly Tyr Glu Asp Val Ile  
 245 250 255  
 Pro Glu Ala Asp Arg Glu Gly Val Ile Arg Tyr Val Ile Gly Val Gly  
 260 265 270  
 Asp Ala Phe Arg Ser Glu Lys Ser Arg Gln Glu Leu Asn Thr Ile Ala  
 275 280 285  
 Ser Lys Pro Pro Arg Asp His Val Phe Gln Val Asn Asn Phe Glu Ala  
 290 295 300  
 Leu Lys Thr Ile Gln Asn Gln Leu Arg Glu Lys Ile Phe Ala Ile Glu  
 305 310 315 320  
 Gly Thr Gln Thr Gly Ser Ser Ser Ser Phe Glu His Glu Met Ser Gln  
 325 330 335  
 Glu Gly Phe Ser Ala Ala Ile Thr Ser Asn Gly Pro Leu Leu Ser Thr  
 340 345 350  
 Val Gly Ser Tyr Asp Trp Ala Gly Val Phe Leu Tyr Thr Ser Lys  
 355 360 365  
 Glu Lys Ser Thr Phe Ile Asn Met Thr Arg Val Asp Ser Asp Met Asn  
 370 375 380  
 Asp Ala Tyr Leu Gly Tyr Ala Ala Ala Ile Ile Leu Arg Asn Arg Val  
 385 390 395 400  
 Gln Ser Leu Val Leu Gly Ala Pro Arg Tyr Gln His Ile Gly Leu Val  
 405 410 415  
 Ala Met Phe Arg Gln Asn Thr Gly Met Trp Glu Ser Asn Ala Asn Val

420															425															430														
Lys	Gly	Thr	Gln	Ile	Gly	Ala	Tyr	Phe	Gly	Ala	Ser	Leu	Cys	Ser	Val																													
435															440															445														
Asp	Val	Asp	Ser	Asn	Gly	Ser	Thr	Asp	Leu	Val	Leu	Ile	Gly	Ala	Pro																													
450															455															460														
His	Tyr	Tyr	Glu	Gln	Thr	Arg	Gly	Gly	Gln	Val	Ser	Val	Cys	Pro	Leu																													
465															470															475														
Pro	Arg	Gly	Arg	Ala	Arg	Trp	Gln	Cys	Asp	Ala	Val	Leu	Tyr	Gly	Glu																													
485															490															495														
Gln	Gly	Gln	Pro	Trp	Gly	Arg	Phe	Gly	Ala	Ala	Leu	Thr	Val	Leu	Gly																													
500															505															510														
Asp	Val	Asn	Gly	Asp	Lys	Leu	Thr	Asp	Val	Ala	Ile	Gly	Ala	Pro	Gly																													
515															520															525														
Glu	Glu	Asp	Asn	Arg	Gly	Ala	Val	Tyr	Leu	Phe	His	Gly	Thr	Ser	Gly																													
530															535															540														
Ser	Gly	Ile	Ser	Pro	Ser	His	Ser	Gln	Arg	Ile	Ala	Gly	Ser	Lys	Leu																													
545															550															555														
Ser	Pro	Arg	Leu	Gln	Tyr	Phe	Gly	Gln	Ser	Leu	Ser	Gly	Gly	Gln	Asp																													
565															570															575														
Leu	Thr	Met	Asp	Gly	Leu	Val	Asp	Leu	Thr	Val	Gly	Ala	Gln	Gly	His																													
580															585															590														
Val	Leu	Leu	Leu	Arg	Ser	Gln	Pro	Val	Leu	Arg	Val	Lys	Ala	Ile	Met																													
595															600															605														
Glu	Phe	Asn	Pro	Arg	Glu	Val	Ala	Arg	Asn	Val	Phe	Glu	Cys	Asn	Asp																													
610															615															620														
Gln	Val	Val	Lys	Gly	Lys	Glu	Ala	Gly	Glu	Val	Arg	Val	Cys	Leu	His																													
625															630															635														
Val	Gln	Lys	Ser	Thr	Arg	Asp	Arg	Leu	Arg	Glu	Gly	Gln	Ile	Gln	Ser																													
645															650															655														
Val	Val	Thr	Tyr	Asp	Leu	Ala	Leu	Asp	Ser	Gly	Arg	Pro	His	Ser	Arg																													
660															665															670														
Ala	Val	Phe	Asn	Glu	Thr	Lys	Asn	Ser	Thr	Arg	Arg	Gln	Thr	Gln	Val																													
675															680															685														
Leu	Gly	Leu	Thr	Gln	Thr	Cys	Glu	Thr	Leu	Lys	Leu	Gln	Leu	Pro	Asn																													
690															695															700														
Cys	Ile	Glu	Asp	Pro	Val	Ser	Pro	Ile	Val	Leu	Arg	Leu	Asn	Phe	Ser																													
705															710															715														
Leu	Val	Gly	Thr	Pro	Leu	Ser	Ala	Phe	Gly	Asn	Leu	Arg	Pro	Val	Leu																													
725															730															735														
Ala	Glu	Asp	Ala	Gln	Arg	Leu	Phe	Thr	Ala	Leu	Phe	Pro	Phe	Glu	Lys																													
740															745															750														
Asn	Cys	Gly	Asn	Asp	Asn	Ile	Cys	Gln	Asp	Asp	Leu	Ser	Ile	Thr	Phe																													
755															760															765														
Ser	Phe	Met	Ser	Leu	Asp	Cys	Leu	Val	Val	Gly	Gly	Pro	Arg	Glu	Ser																													
770															775															780														
Asn	Val	Thr	Val	Thr	Val	Arg	Asn	Asp	Gly	Glu	Asp	Ser	Tyr	Arg	Thr																													
785															790															795														
Gln	Val	Thr	Phe	Phe	Phe	Pro	Leu	Asp	Leu	Ser	Tyr	Arg	Lys	Val	Ser																													
805															810															815														
Thr	Leu	Gln	Asn	Gln	Arg	Ser	Gln	Arg	Ser	Trp	Arg	Leu	Ala	Cys	Glu																													
820															825															830														
Ser	Ala	Ser	Ser	Thr	Glu	Val	Ser	Gly	Ala	Leu	Lys	Ser	Thr	Ser	Cys																													
835															840															845														
Ser	Ile	Asn	His	Pro	Ile	Phe	Pro	Glu	Asn	Ser	Glu	Val	Thr	Phe																														

Leu Lys Ala Asn Val Thr Ser Glu Asn Asn Met Pro Arg Thr Asn Lys  
 885 890 895  
 Thr Glu Phe Gln Leu Glu Leu Pro Val Lys Tyr Ala Val Tyr Met Val  
 900 905 910  
 Val Thr Ser His Gly Val Ser Thr Lys Tyr Leu Asn Phe Thr Ala Ser  
 915 920 925  
 Glu Asn Thr Ser Arg Val Met Gln His Gln Tyr Gln Val Ser Asn Leu  
 930 935 940  
 Gly Gln Arg Ser Pro Pro Ile Ser Leu Val Phe Leu Val Pro Val Arg  
 945 950 955 960  
 Leu Asn Gln Thr Val Ile Trp Asp Arg Pro Gln Val Thr Phe Ser Glu  
 965 970 975  
 Asn Leu Ser Ser Thr Cys His Thr Lys Glu Arg Leu Pro Ser His Ser  
 980 985 990  
 Asp Phe Leu Ala Glu Leu Arg Lys Ala Pro Val Val Asn Cys Ser Ile  
 995 1000 1005  
 Ala Val Cys Gln Arg Ile Gln Cys Asp Ile Pro Phe Phe Gly Ile Gln  
 1010 1015 1020  
 Glu Glu Phe Asn Ala Thr Leu Lys Gly Asn Leu Ser Phe Asp Trp Tyr  
 1025 1030 1035 1040  
 Ile Lys Thr Ser His Asn His Leu Leu Ile Val Ser Thr Ala Glu Ile  
 1045 1050 1055  
 Leu Phe Asn Asp Ser Val Phe Thr Leu Leu Pro Gly Gln Gly Ala Phe  
 1060 1065 1070  
 Val Arg Ser Gln Thr Glu Thr Lys Val Glu Pro Phe Glu Val Pro Asn  
 1075 1080 1085  
 Pro Leu Pro Leu Ile Val Gly Ser Ser Val Gly Gly Leu Leu Leu Leu  
 1090 1095 1100  
 Ala Leu Ile Thr Ala Ala Leu Tyr Lys Leu Gly Phe Phe Lys Arg Gln  
 1105 1110 1115 1120  
 Tyr Lys Asp Met Met Ser Glu Gly Gly Pro Pro Gly Ala Glu Pro Gln  
 1125 1130 1135

<210> 44

<211> 4704

<212> DNA

<213> Homo sapiens

<400> 44

gaattcctgc cactcttctt gcaacggccc aggagctcag agctccacat ctgaccttct  
 60  
 agtcatgacc aggaccaggg cagcactcct cctgttcaca gccttagcaa cttctctagg  
 120  
 tttcaacttg gacacagagg agctgacagc cttccgtgtg gacagcgctg ggtttggaga  
 180  
 cagcgtgggc cagtatgcca actcctgggt ggtggttgga gcccccaaa agataacagc  
 240  
 tgccaaccaa acgggtggcc tctaccagtg tggctacagc actggtgcct gtgagcccat  
 300  
 cggcctgcag gtgccccggg aggccgtgaa catgtccctg ggctgtccc tggcgtctac  
 360  
 caccagccct tcccagctgc tggcctgcgg cccaccgtg caccacgagt gcgggaggaa  
 420  
 catgtacctc accggactct gcttcctcct gggccccacc cagctcacc agaggctccc  
 480  
 ggtgtccagg caggagtgcc caagacagga gcaggacatt gtgttctga tcgatggctc  
 540

aggcagcatc tcctcccgca actttgccac gatgatgaac ttcgtgagag ctgtgataag  
 600  
 ccagttccag agaccagca cccagttttc cctgatgcag ttctccaaca aattccaaac  
 660  
 acatttact ttcgaggaat tcaggcgcac gtcaaaccac ctcagcctgt tggcttctgt  
 720  
 tcaccagctg caagggttta catacacggc caccgccatc caaaatgtcg tgcaccgatt  
 780  
 gttccatgcc tcatatgggg cccgtaggga tgccaccaa attctcattg tcatcactga  
 840  
 tgggaagaaa gaaggcgaca gcctggatta taaggatgtc atcccatgg ctgatgcagc  
 900  
 aggcacatc cgctatgcaa ttgggggttg attagctttt caaaacagaa attcttggaa  
 960  
 agaattaaat gacattgcat cgaagccctc ccaggaacac atatttaaag tggaggactt  
 1020  
 tgatgctctg aaagatatc aaaaccaact gaaggagaag atctttgcca ttgagggtac  
 1080  
 ggagaccaca agcagtagct ccttcgaatt ggagatggca caggagggct tcagcgtgt  
 1140  
 gttcacacct gatggccccg ttctgggggc tgtggggagc ttcacctggt ctggagggtc  
 1200  
 cttcctgtac ccccaaata tgagccctac cttcatcaac atgtctcagg agaattgtga  
 1260  
 catgagggac tcttacctgg gttactccac cgagctggcc ctctggaaag ggggtgcagag  
 1320  
 cctggtcctg ggggcccccc gctaccagca caccgggaag gctgtcatct tcaccagggt  
 1380  
 gtccaggcaa tggaggatga aggccgaagt cacggggact cagatcggct cctacttcgg  
 1440  
 ggccctccctc tgctccgtgg acgtagacac cgacggcagc accgacctgg tcctcatcgg  
 1500  
 ggccccccat tactacgagc agaccagagg gggccagggtg tctgtgtgtc ccttgcccag  
 1560  
 ggggtggaga aggtggtggt gtgatgctgt tctctacggg gagcagggcc acccctgggg  
 1620  
 tcgctttggg gcggctctga cagtgtggg ggatgtgaat ggggacaagc tgacagacgt  
 1680  
 ggtcatcggg gccccaggag aggaggagaa ccgggggtgct gtctacctgt ttcacggagt  
 1740  
 cttgggaccc agcatcagcc cctccacag ccagcggatc gcgggctccc agctctctc  
 1800  
 caggctgcag tattttgggc aggcactgag cgggggtcaa gacctaccc aggatggact  
 1860  
 ggtggacctg gctgtggggg cccggggcca ggtgtcctg ctcaggacca gacctgtgct  
 1920  
 ctgggtgggg gtgagcatgc agttcatacc tgccgagatc cccaggctctg cgtttgagt  
 1980  
 tcgggagcag gtggtctctg agcagacct ggtacagtcc aacatctgcc ttacattga  
 2040  
 caaacgttct aagaacctgc ttgggagccg tgacctcaa agctctgtga ccttgacct  
 2100  
 ggccctcgac cctggccgcc tgagtccccg tgccaccttc caggaaacaa agaaccggag  
 2160  
 tctgagccga gtccgagtc tcgggctgaa ggcacactgt gaaaacttca acctgctgt  
 2220

cccgagctgc gtggaggact ctgtgacccc cattaccttg cgtctgaact tcacgctggt  
 2280  
 gggcaagccc ctcccttgct tcagaaacct gcggcctatg ctggccgcac tggctcagag  
 2340  
 atacttcacg gcctccctac cctttgagaa gaactgtgga gccgaccata tctgccagga  
 2400  
 caatctcggc atctccttca gcttcccagg cttgaagtcc ctgctggtgg ggagtaacct  
 2460  
 ggagctgaac gcagaagtga tgggtgtgaa tgacggggaa gactcctacg gaaccacat  
 2520  
 caccttctcc caccocgcag gactgtccta ccgctacgtg gcagagggcc agaaacaagg  
 2580  
 gcagctgcgt tccctgcacc tgacatgtga cagcgcccca gttgggagcc agggcacctg  
 2640  
 gagcaccagc tgcagaatca accacctcat cttccgtggc ggcgccaga tcaccttctt  
 2700  
 ggctaccttt gacgtctccc ccaaggctgt cctgggagac cggtgcttc tgacagccaa  
 2760  
 tgtgagcagt gagaacaaca ctcccaggac cagcaagacc acctccagc tggagctccc  
 2820  
 ggtgaagtat gctgtctaca ctgtggttag cagccacgaa caattcacca aatacctcaa  
 2880  
 cttctcagag tctgaggaga aggaaagcca tgtggccatg cacagatacc aggtcaataa  
 2940  
 cctgggacag agggacctgc ctgtcagcat caacttctgg gtgcctgtgg agctgaacca  
 3000  
 ggaggctgtg tggatggatg tggaggtctc ccaccccag aaccatccc ttcggtgctc  
 3060  
 ctcagagaaa atcgacccc cagcatctga cttcctggcg cacattcaga agaatcccgt  
 3120  
 gctggactgc tccattgctg gctgcctgcg gttccgtgtg gacgtccct ccttcagcgt  
 3180  
 ccaggaggag ctggatttca ccctgaaggg caacctcagc tttggctggg tccgccagat  
 3240  
 attgcagaag aagggtgtcg tcgtgagtgt ggctgaaatt acgttcgaca catccgtgta  
 3300  
 ctcccagctt ccaggacagg aggcatttat gagagctcag acgacaacgg tgctggagaa  
 3360  
 gtacaaggtc cacaacccca cccctcat cgtaggcagc tccattgggg gtctgttct  
 3420  
 gctggcactc atcacagcgg tactgtacaa agttggcttc ttcaagcgtc agtacaagga  
 3480  
 aatgatggag gaggcaaatt gacaaattgc ccagaaaac gggacacaga ccccagccc  
 3540  
 gccagtgag aaatgatccc tctttgcctt ggacttcttc tcccgcgatt tccccactt  
 3600  
 acttacctc acctgtcagg ctgacgggga ggaaccactg caccaccgag agaggctggg  
 3660  
 atgggcctgc ttctgtctt tgggagaaaa cgtcttgctt ggggaagggc ctttgtctt  
 3720  
 tcaaggttcc aactggaaac ccttaggaca gggccctgc tgtgttcccc aaaaggactt  
 3780  
 gacttgcaat ttctacctag aaatacatgg acaatacccc caggcctcag tctcccttct  
 3840  
 cccatgaggc acgaatgatc tttctttcct ttctttttt tttttttct tttttttt  
 3900



ttttttttgg agacggagtc tcgctctgtc acccaggctg gagggaatg gcgtgatctc  
 3960  
 ggctcgctgc aacctccgcc tcccgggttc aagtaattct gctgtctcag cctcctgcgt  
 4020  
 agctgggact acaggcacac gccacctcgc ccggcccgat ctttctaaaa tacagttctg  
 4080  
 aatatgctgc tcatccccac ctgtcttcaa cagctcccca ttacctcag gacaatgtct  
 4140  
 gaactctcca gtttcgctg agaagtcccc ttccatccca gaggggtgggc ttcagggcgc  
 4200  
 acagcatgag agcctctgtg ccccatcac cctcgtttcc agtgaattag tgtcatgtca  
 4260  
 gcatcagctc agggcttcat cgtggggctc tcagttccga ttccccaggc tgaattggga  
 4320  
 gtgagatgcc tgcattgctg gttctgcaca gctggcctcc cgcggttggg tcaacattgc  
 4380  
 tggcctggaa gggaggagcg ccctctaggg agggacatgg ccccggtgcg gctgcagctc  
 4440  
 accagcccca ggggcagaag agacccaacc acttcctatt ttttgaggct atgaatatag  
 4500  
 tacctgaaaa aatgccaagc actagattat ttttttaaaa agcgtacttt aaatgtttgt  
 4560  
 gtttaatacac attaaaacat cgcacaaaaa cgatgcattt accgctcctt gggaaataat  
 4620  
 ctgaaaggct taaaaataaa aaagccttct gtggaaaaaa aaaaaaaaaa aaaaaaaaaa  
 4680  
 aaaaaaaaaa aaaaaaaaaa aaaa  
 4704

<210> 45

<211> 253

<212> PRT

<213> Homo sapiens

<400> 45

Gly	Ala	Glu	Ala	Asn	Phe	Met	Leu	Lys	Val	His	Pro	Leu	Lys	Lys	Tyr
1				5					10					15	
Pro	Val	Asp	Leu	Tyr	Tyr	Leu	Val	Asp	Val	Ser	Ala	Ser	Met	His	Asn
			20					25					30		
Asn	Ile	Glu	Lys	Leu	Asn	Ser	Val	Gly	Asn	Asp	Leu	Ser	Arg	Lys	Met
		35					40					45			
Ala	Phe	Phe	Ser	Arg	Asp	Phe	Arg	Leu	Gly	Phe	Gly	Ser	Tyr	Val	Asp
	50					55					60				
Lys	Thr	Val	Ser	Pro	Tyr	Ile	Ser	Ile	His	Pro	Glu	Arg	Ile	His	Asn
	65				70					75				80	
Gln	Cys	Ser	Asp	Tyr	Asn	Leu	Asp	Cys	Met	Pro	Pro	His	Gly	Tyr	Ile
			85					90						95	
His	Val	Leu	Ser	Leu	Thr	Glu	Asn	Ile	Thr	Glu	Phe	Glu	Lys	Ala	Val
		100						105					110		
His	Arg	Gln	Lys	Ile	Ser	Gly	Asn	Ile	Asp	Thr	Pro	Glu	Gly	Gly	Phe
	115					120					125				
Asp	Ala	Met	Leu	Gln	Ala	Ala	Val	Cys	Glu	Ser	His	Ile	Gly	Trp	Arg
	130				135						140				
Lys	Glu	Ala	Lys	Arg	Leu	Leu	Leu	Val	Met	Thr	Asp	Gln	Thr	Ser	His
	145				150					155				160	
Leu	Ala	Leu	Asp	Ser	Lys	Leu	Ala	Gly	Ile	Val	Val	Pro	Asn	Asp	Gly
			165						170					175	

Asn	Cys	His	Leu	Lys	Asn	Asn	Val	Tyr	Val	Lys	Ser	Thr	Thr	Met	Glu
			180					185					190		
His	Pro	Ser	Leu	Gly	Gln	Leu	Ser	Glu	Lys	Leu	Ile	Asp	Asn	Asn	Ile
		195					200					205			
Asn	Val	Ile	Phe	Ala	Val	Gln	Gly	Lys	Gln	Phe	His	Trp	Tyr	Lys	Asp
	210					215					220				
Leu	Leu	Pro	Leu	Leu	Pro	Gly	Thr	Ile	Ala	Gly	Glu	Ile	Glu	Ser	Lys
225					230					235					240
Ala	Ala	Asn	Leu	Asn	Asn	Leu	Val	Val	Glu	Ala	Tyr	Gln			
			245					250							

<210> 46  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 46  
 Asp Val Asp Ser Asn Gly Ser Thr Asp  
 1 5

<210> 47  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 47  
 Asp Val Asn Gly Asp Lys Leu Thr Asp  
 1 5

<210> 48  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 48  
 Asp Leu Thr Met Asp Gly Leu Val Asp  
 1 5

<210> 49  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 49  
 Asp Ser Asp Met Asn Asp Ala Tyr Leu  
 1 5

<210> 50  
 <211> 33  
 <212> PRT  
 <213> Homo sapiens

<400> 50  
 Asn Ala Phe Lys Ile Leu Val Val Ile Thr Asp Gly Glu Lys Phe Gly  
 1 5 10 15  
 Asp Pro Leu Gly Tyr Glu Asp Val Ile Pro Glu Ala Asp Arg Glu Gly  
 20 25 30

Val

<210> 51  
 <211> 5  
 <212> PRT  
 <213> Homo sapiens

<400> 51  
 Asp Gly Glu Lys Phe  
 1 5

<210> 52  
 <211> 253  
 <212> PRT  
 <213> Homo sapiens

<400> 52  
 Gly Glu Pro Gln Gln Leu Gln Val Arg Phe Leu Arg Ala Glu Gly Tyr  
 1 5 10 15  
 Pro Val Asp Leu Tyr Tyr Leu Met Asp Leu Ser Ser Ser Met Lys Asp  
 20 25 30  
 Asp Leu Glu Arg Val Arg Gln Leu Gly His Ala Leu Leu Val Arg Leu  
 35 40 45  
 Gln Glu Val Thr His Ser Val Arg Ile Gly Phe Gly Ser Phe Val Asp  
 50 55 60  
 Lys Thr Val Leu Pro Phe Val Ser Thr Val Pro Ser Lys Leu Arg His  
 65 70 75 80  
 Pro Cys Pro Thr Arg Leu Glu Arg Cys Gln Ser Pro Phe Ser Phe His  
 85 90 95  
 His Val Leu Ser Leu Thr Gly Asp Ala Gln Ala Phe Glu Arg Glu Val  
 100 105 110  
 Gly Arg Gln Ser Val Ser Gly Asn Leu Asp Ser Pro Glu Gly Gly Phe  
 115 120 125  
 Asp Ala Ile Leu Gln Ala Ala Leu Cys Gln Glu Gln Ile Gly Trp Arg  
 130 135 140  
 Asn Val Ser Arg Leu Leu Val Phe Thr Ser Asp Asp Thr Phe His Thr  
 145 150 155 160  
 Ala Gly Asp Gly Lys Leu Gly Gly Ile Phe Met Pro Ser Asp Gly Ser  
 165 170 175  
 Cys His Leu Asp Ser Asn Gly Leu Tyr Ser Arg Ser Thr Glu Phe Asp  
 180 185 190  
 Tyr Pro Ser Val Gly Gln Val Ala Gln Ala Leu Ser Ala Ala Asn Ile  
 195 200 205  
 Gln Pro Ile Phe Ala Val Thr Ser Ala Ala Leu Pro Val Tyr Gln Glu  
 210 215 220  
 Leu Ser Lys Leu Ile Pro Lys Ser Ala Val Gly Glu Leu Ser Glu Asp  
 225 230 235 240  
 Ser Ser Asn Val Val Gln Leu Ile Met Asp Ala Tyr Asn  
 245 250

<210> 53  
 <211> 255  
 <212> PRT  
 <213> Homo sapiens

<400> 53

Gly Gly Ala Gln Thr Leu Gln Val His Val Arg Gln Thr Glu Asp Tyr  
 1 5 10 15  
 Pro Val Asp Leu Tyr Tyr Leu Met Asp Leu Ser Ala Ser Met Asp Asp  
 20 25 30  
 Asp Leu Asn Thr Ile Lys Glu Leu Gly Ser Gly Leu Ser Lys Glu Met  
 35 40 45  
 Ser Lys Leu Thr Ser Asn Phe Arg Leu Gly Phe Gly Ser Phe Val Glu  
 50 55 60  
 Lys Pro Val Ser Pro Phe Val Lys Thr Thr Pro Glu Glu Ile Ala Asn  
 65 70 75 80  
 Pro Cys Ser Ser Ile Pro Tyr Phe Cys Leu Pro Thr Phe Gly Phe Lys  
 85 90 95  
 His Ile Leu Pro Leu Thr Asn Asp Ala Glu Arg Phe Asn Glu Ile Val  
 100 105 110  
 Lys Asn Gln Lys Ile Ser Ala Asn Ile Asp Thr Pro Glu Gly Gly Phe  
 115 120 125  
 Asp Ala Ile Met Gln Ala Ala Val Cys Lys Glu Lys Ile Gly Trp Trp  
 130 135 140  
 Arg Asn Asp Ser Leu His Leu Leu Val Phe Val Ser Asp Ala Asp Ser  
 145 150 155 160  
 His Phe Gly Met Asp Ser Lys Leu Ala Gly Ile Val Ile Pro Asn Asp  
 165 170 175  
 Gly Leu Cys His Leu Asp Ser Lys Asn Glu Tyr Ser Met Ser Thr Val  
 180 185 190  
 Leu Glu Tyr Pro Thr Ile Gly Gly Leu Ile Asp Lys Leu Val Gln Asn  
 195 200 205  
 Asn Val Leu Leu Ile Phe Ala Val Thr Gln Glu Gln Val His Leu Tyr  
 210 215 220  
 Glu Asn Tyr Ala Lys Leu Ile Pro Gly Ala Thr Val Gly Leu Leu Gln  
 225 230 235 240  
 Lys Asp Ser Gly Asn Ile Leu Gln Leu Ile Ile Ser Ala Tyr Glu  
 245 250 255

<210> 54

<211> 256

<212> PRT

<213> Homo sapiens

<400> 54

Gly Asp Lys Thr Thr Phe Gln Leu Gln Val Arg Gln Val Glu Asp Tyr  
 1 5 10 15  
 Pro Val Asp Leu Tyr Tyr Leu Met Asp Leu Ser Leu Ser Met Lys Asp  
 20 25 30  
 Asp Leu Asp Asn Ile Arg Ser Leu Gly Thr Lys Leu Ala Glu Glu Met  
 35 40 45  
 Arg Lys Leu Thr Ser Asn Phe Arg Leu Gly Phe Gly Ser Phe Val Asp  
 50 55 60  
 Lys Asp Ile Ser Pro Phe Ser Tyr Thr Ala Pro Arg Tyr Gln Thr Asn  
 65 70 75 80  
 Pro Cys Ile Gly Tyr Lys Leu Phe Pro Asn Cys Val Pro Ser Phe Gly  
 85 90 95  
 Phe Arg His Leu Leu Pro Leu Thr Asp Arg Val Asp Ser Phe Asn Glu  
 100 105 110  
 Glu Val Arg Lys Gln Arg Val Ser Arg Asn Arg Asp Ala Pro Glu Gly  
 115 120 125  
 Gly Phe Asp Ala Val Leu Gln Ala Ala Val Cys Lys Glu Lys Ile Gly  
 130 135 140

Trp Arg Lys Asp Ala Leu His Leu Leu Val Phe Thr Thr Asp Asp Val  
 145 150 155 160  
 Pro His Ile Ala Leu Asp Gly Lys Leu Gly Gly Leu Val Gln Pro His  
 165 170 175  
 Asp Gly Gln Cys His Leu Asn Glu Ala Asn Glu Tyr Thr Ala Ser Asn  
 180 185 190  
 Gln Met Asp Tyr Pro Ser Leu Ala Leu Leu Gly Glu Lys Leu Ala Glu  
 195 200 205  
 Asn Asn Ile Asn Leu Ile Phe Ala Val Thr Lys Asn His Tyr Met Leu  
 210 215 220  
 Tyr Lys Asn Phe Thr Ala Leu Ile Pro Gly Thr Thr Val Glu Ile Leu  
 225 230 235 240  
 Asp Gly Asp Ser Lys Asn Ile Ile Gln Leu Ile Ile Asn Ala Tyr Asn  
 245 250 255

<210> 55

<211> 252

<212> PRT

<213> Homo sapiens

<400> 55

Gly Glu Glu Arg His Phe Glu Leu Glu Val Phe Glu Pro Leu Glu Ser  
 1 5 10 15  
 Pro Val Asp Leu Tyr Ile Leu Met Asp Phe Ser Asn Ser Met Ser Asp  
 20 25 30  
 Asp Leu Asp Asn Leu Lys Lys Met Gly Gln Asn Leu Ala Arg Val Leu  
 35 40 45  
 Ser Gln Leu Thr Ser Asp Tyr Thr Ile Gly Phe Gly Lys Phe Val Asp  
 50 55 60  
 Lys Val Ser Val Pro Gln Thr Asp Met Arg Pro Glu Lys Leu Lys Glu  
 65 70 75 80  
 Pro Trp Pro Asn Ser Asp Pro Pro Phe Ser Phe Lys Asn Val Ile Ser  
 85 90 95  
 Leu Thr Glu Asp Val Asp Glu Phe Arg Asn Lys Leu Gln Gly Glu Arg  
 100 105 110  
 Ile Ser Gly Asn Leu Asp Ala Pro Glu Gly Gly Phe Asp Ala Ile Leu  
 115 120 125  
 Gln Thr Ala Val Cys Thr Arg Asp Ile Gly Trp Arg Pro Asp Ser Thr  
 130 135 140  
 His Leu Leu Val Phe Ser Thr Glu Ser Ala Phe His Tyr Glu Ala Asp  
 145 150 155 160  
 Gly Ala Asn Val Leu Ala Gly Ile Met Ser Arg Asn Asp Glu Arg Cys  
 165 170 175  
 His Leu Asp Thr Thr Gly Thr Tyr Thr Gln Tyr Arg Thr Gln Asp Tyr  
 180 185 190  
 Pro Ser Val Pro Thr Leu Val Arg Leu Leu Ala Lys His Asn Ile Ile  
 195 200 205  
 Pro Ile Phe Ala Val Thr Asn Tyr Ser Tyr Ser Tyr Tyr Glu Lys Leu  
 210 215 220  
 His Thr Tyr Phe Pro Val Ser Ser Leu Gly Val Leu Gln Glu Asp Ser  
 225 230 235 240  
 Ser Asn Ile Val Glu Leu Leu Glu Glu Ala Phe Asn  
 245 250

<210> 56

<211> 255

<212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 56

Asp	Asp	Ser	Lys	Asn	Phe	Ser	Ile	Gln	Val	Arg	Gln	Val	Glu	Asp	Tyr	1	5	10	15
Pro	Val	Asp	Ile	Tyr	Tyr	Leu	Met	Asp	Leu	Ser	Tyr	Ser	Met	Lys	Asp	20	25	30	
Asp	Leu	Trp	Ser	Ile	Gln	Asn	Leu	Gly	Thr	Lys	Leu	Ala	Thr	Gln	Met	35	40	45	
Arg	Lys	Leu	Thr	Ser	Asn	Leu	Arg	Ile	Gly	Phe	Gly	Ala	Phe	Val	Asp	50	55	60	
Lys	Pro	Val	Ser	Pro	Tyr	Met	Tyr	Ile	Ser	Pro	Pro	Glu	Ala	Leu	Glu	65	70	75	80
Asn	Pro	Cys	Tyr	Asp	Met	Lys	Thr	Thr	Cys	Leu	Pro	Met	Phe	Gly	Tyr	85	90	95	
Lys	His	Val	Leu	Thr	Leu	Thr	Asp	Gln	Val	Thr	Arg	Phe	Asn	Glu	Glu	100	105	110	
Val	Lys	Lys	Gln	Ser	Val	Ser	Arg	Asn	Arg	Asp	Ala	Pro	Glu	Gly	Gly	115	120	125	
Phe	Asp	Ala	Ile	Met	Gln	Ala	Thr	Val	Cys	Asp	Glu	Lys	Ile	Gly	Trp	130	135	140	
Arg	Asn	Asp	Ala	Ser	His	Leu	Leu	Val	Phe	Thr	Thr	Asp	Ala	Lys	Thr	145	150	155	160
His	Ile	Ala	Leu	Asp	Gly	Arg	Leu	Ala	Gly	Ile	Val	Gln	Pro	Asn	Asp	165	170	175	
Gly	Gln	Cys	His	Val	Gly	Ser	Asp	Asn	His	Tyr	Ser	Ala	Ser	Thr	Thr	180	185	190	
Met	Asp	Tyr	Pro	Ser	Leu	Gly	Leu	Met	Thr	Glu	Lys	Leu	Ser	Gln	Lys	195	200	205	
Asn	Ile	Asn	Leu	Ile	Phe	Ala	Val	Thr	Glu	Asn	Val	Val	Asn	Leu	Tyr	210	215	220	
Gln	Asn	Tyr	Ser	Glu	Leu	Ile	Pro	Gly	Thr	Thr	Val	Gly	Val	Leu	Ser	225	230	235	240
Met	Asp	Ser	Ser	Asn	Val	Leu	Gln	Leu	Ile	Val	Asp	Ala	Tyr	Gly		245	250	255	

&lt;210&gt; 57

&lt;211&gt; 252

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 57

Gly	Gln	Ala	Ala	Ala	Phe	Asn	Val	Thr	Phe	Arg	Arg	Ala	Lys	Gly	Tyr	1	5	10	15
Pro	Ile	Asp	Leu	Tyr	Tyr	Leu	Met	Asp	Leu	Ser	Tyr	Ser	Met	Leu	Asp	20	25	30	
Asp	Leu	Arg	Asn	Val	Lys	Lys	Leu	Gly	Gly	Asp	Leu	Leu	Arg	Ala	Leu	35	40	45	
Asn	Glu	Ile	Thr	Glu	Ser	Gly	Arg	Ile	Gly	Phe	Gly	Ser	Phe	Val	Asp	50	55	60	
Lys	Thr	Val	Leu	Pro	Phe	Val	Asn	Thr	His	Pro	Asp	Lys	Leu	Arg	Asn	65	70	75	80
Pro	Cys	Pro	Asn	Lys	Glu	Lys	Glu	Cys	Gln	Pro	Pro	Phe	Ala	Phe	Arg	85	90	95	
His	Val	Leu	Lys	Leu	Thr	Asn	Asn	Ser	Gln	Phe	Gln	Thr	Glu	Val		100	105	110	
Gly	Lys	Gln	Leu	Ile	Ser	Gly	Asn	Leu	Asp	Ala	Pro	Glu	Gly	Gly	Leu				

115	120	125
Asp Ala Met Met Gln Val	Ala Ala Cys Pro Glu Glu Ile Gly Trp Arg	
130	135	140
Asn Val Thr Arg Leu Leu Val	Phe Ala Thr Asp Asp Gly Phe His Phe	
145	150	155
Ala Gly Asp Gly Lys Leu Gly	Ala Ile Leu Thr Pro Asn Asp Gly Arg	160
165	170	175
Cys His Leu Glu Asp Asn Leu Tyr	Lys Arg Ser Asn Glu Phe Asp Tyr	
180	185	190
Pro Ser Val Gly Gln Leu Ala His	Lys Leu Ala Glu Asn Asn Ile Gln	
195	200	205
Pro Ile Phe Ala Val Thr Ser	Arg Met Val Lys Thr Tyr Glu Lys Leu	
210	215	220
Thr Glu Ile Ile Pro Lys Ser	Ala Val Gly Glu Leu Ser Glu Asp Ser	240
225	230	235
Ser Asn Val Val His Leu Ile	Lys Asn Ala Tyr Asn	
245	250	

&lt;210&gt; 58

&lt;211&gt; 251

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 58

Gly Glu Pro Gln Thr Phe Thr	Leu Lys Phe Lys Arg Ala Glu Asp Tyr	
1	5	10
Pro Ile Asp Leu Tyr Tyr Leu	Met Asp Leu Ser Tyr Ser Met Lys Asp	15
20	25	30
Asp Leu Glu Asn Val Lys Ser	Leu Gly Thr Asp Leu Met Asn Glu Met	
35	40	45
Arg Arg Ile Thr Ser Asp Phe	Arg Ile Gly Phe Gly Ser Phe Val Glu	
50	55	60
Lys Thr Val Met Pro Tyr Ile	Ser Thr Thr Pro Ala Lys Leu Arg Asn	80
65	70	75
Pro Cys Thr Ser Glu Gln Asn	Cys Thr Thr Pro Phe Ser Tyr Lys Asn	
85	90	95
Val Leu Ser Leu Thr Asn Lys	Gly Glu Val Phe Asn Glu Leu Val Gly	
100	105	110
Lys Gln Arg Ile Ser Gly Asn	Leu Asp Ser Pro Glu Gly Gly Phe Asp	
115	120	125
Ala Ile Met Gln Val Ala Val	Cys Gly Ser Leu Ile Gly Trp Arg Asn	
130	135	140
Val Thr Arg Leu Leu Val Phe	Ser Thr Asp Ala Gly Phe His Phe Ala	
145	150	155
Gly Asp Gly Lys Leu Gly Gly	Ile Val Leu Pro Asn Asp Gly Gln Cys	160
165	170	175
His Leu Glu Asn Asn Met Tyr	Thr Met Ser His Tyr Tyr Asp Tyr Pro	
180	185	190
Ser Ile Ala His Leu Val Gln	Lys Leu Ser Glu Asn Asn Ile Gln Thr	
195	200	205
Ile Phe Ala Val Thr Glu Glu	Phe Gln Pro Val Tyr Lys Glu Leu Lys	
210	215	220
Asn Leu Ile Pro Lys Ser Ala	Val Gly Thr Leu Ser Ala Asn Ser Ser	240
225	230	235
Asn Val Ile Gln Leu Ile Ile	Asp Ala Tyr Asn	
245	250	

<210> 59  
 <211> 187  
 <212> PRT  
 <213> Homo sapiens

<400> 59

Cys	Pro	Arg	Gln	Glu	Gln	Asp	Ile	Val	Phe	Leu	Ile	Asp	Gly	Ser	Gly	1	5	10	15
Ser	Ile	Ser	Ser	Arg	Asn	Phe	Ala	Thr	Met	Met	Asn	Phe	Val	Arg	Ala	20	25	30	
Val	Ile	Ser	Gln	Phe	Gln	Arg	Pro	Ser	Thr	Gln	Phe	Ser	Leu	Met	Gln	35	40	45	
Phe	Ser	Asn	Lys	Phe	Gln	Thr	His	Phe	Thr	Phe	Glu	Glu	Phe	Arg	Arg	50	55	60	
Thr	Ser	Asn	Pro	Leu	Ser	Leu	Leu	Ala	Ser	Val	His	Gln	Leu	Gln	Gly	65	70	75	80
Phe	Thr	Tyr	Thr	Ala	Thr	Ala	Ile	Gln	Asn	Val	Val	His	Arg	Leu	Phe	85	90	95	
His	Ala	Ser	Tyr	Gly	Ala	Arg	Arg	Asp	Ala	Thr	Lys	Ile	Leu	Ile	Val	100	105	110	
Ile	Thr	Asp	Gly	Lys	Lys	Glu	Gly	Asp	Ser	Leu	Asp	Tyr	Lys	Asp	Val	115	120	125	
Ile	Pro	Met	Ala	Asp	Ala	Ala	Gly	Ile	Ile	Arg	Tyr	Ala	Ile	Gly	Val	130	135	140	
Gly	Leu	Ala	Phe	Gln	Asn	Arg	Asn	Ser	Trp	Lys	Glu	Leu	Asn	Asp	Ile	145	150	155	160
Ala	Ser	Lys	Pro	Ser	Gln	Glu	His	Ile	Phe	Lys	Val	Glu	Asp	Phe	Asp	165	170	175	
Ala	Leu	Lys	Asp	Ile	Gln	Asn	Gln	Leu	Lys	Glu						180	185		

<210> 60  
 <211> 181  
 <212> PRT  
 <213> Homo sapiens

<400> 60

Cys	Ile	Lys	Gly	Asn	Val	Asp	Leu	Val	Phe	Leu	Phe	Asp	Gly	Ser	Met	1	5	10	15
Ser	Leu	Gln	Pro	Asp	Glu	Phe	Gln	Lys	Ile	Leu	Asp	Phe	Met	Lys	Asp	20	25	30	
Val	Met	Lys	Lys	Leu	Ser	Asn	Thr	Ser	Tyr	Gln	Phe	Ala	Ala	Val	Gln	35	40	45	
Phe	Ser	Thr	Ser	Tyr	Lys	Thr	Glu	Phe	Asp	Phe	Ser	Asp	Tyr	Val	Lys	50	55	60	
Trp	Lys	Asp	Pro	Asp	Ala	Leu	Leu	Lys	His	Val	Lys	His	Met	Leu	Leu	65	70	75	80
Leu	Thr	Asn	Thr	Phe	Gly	Ala	Ile	Asn	Tyr	Val	Ala	Thr	Glu	Val	Phe	85	90	95	
Arg	Glu	Glu	Leu	Gly	Ala	Arg	Pro	Asp	Ala	Thr	Lys	Val	Leu	Ile	Ile	100	105	110	
Ile	Thr	Asp	Gly	Glu	Ala	Thr	Asp	Ser	Gly	Asn	Ile	Asp	Ala	Ala	Lys	115	120	125	
Asp	Ile	Ile	Arg	Tyr	Ile	Ile	Gly	Ile	Gly	Lys	His	Phe	Gln	Thr	Lys	130	135	140	
Glu	Ser	Gln	Glu	Thr	Leu	His	Lys	Phe	Ala	Ser	Lys	Pro	Ala	Ser	Glu	145	150	155	160



<400> 65  
Arg Ser Leu Val Lys Pro Ile Thr Gln Leu Leu Gly Arg Thr His Thr  
1 5 10 15

Ala Thr Gly Ile  
20

<210> 66  
<211> 20  
<212> PRT  
<213> Homo sapiens

<400> 66  
Thr Gly Ile Arg Lys Val Val Arg Glu Leu Phe Asn Ile Thr Asn Gly  
1 5 10 15  
Ala Arg Lys Asn  
20

<210> 67  
<211> 29  
<212> PRT  
<213> Homo sapiens

<400> 67  
Lys Val Val Arg Glu Leu Ser Asn Ile Thr Asn Gly Ala Arg Lys Asn  
1 5 10 15  
Ala Ser Lys Ile Leu Val Val Ile Thr Asp Gly Glu Lys  
20 25

<210> 68  
<211> 17  
<212> PRT  
<213> Homo sapiens

<400> 68  
Asp Arg Glu Gly Val Ile Arg Tyr Val Ile Gly Val Gly Asp Ala Phe  
1 5 10 15  
Arg

<210> 69  
<211> 20  
<212> PRT  
<213> Homo sapiens

<400> 69  
His Val Phe Gln Val Asn Asn Phe Glu Ala Leu Lys Thr Ile Gln Asn  
1 5 10 15  
Gln Leu Arg Glu  
20

<210> 70  
<211> 14  
<212> PRT  
<213> Homo sapiens

<400> 70  
Asn Ala Phe Lys Ile Leu Val Val Ile Thr Asp Gly Glu Lys  
1 5 10

<210> 71

<211> 7  
<212> PRT  
<213> Homo sapiens

<400> 71  
Asn Ala Phe Lys Ile Leu Val  
1 5

<210> 72  
<211> 7  
<212> PRT  
<213> Homo sapiens

<400> 72  
Val Ile Thr Asp Gly Glu Lys  
1 5